

EXHIBIT 1

US009616276B2

(12) **United States Patent**
Dalebout et al.

(10) **Patent No.:** **US 9,616,276 B2**
(45) **Date of Patent:** **Apr. 11, 2017**

(54) **STRENGTH TRAINING APPARATUS WITH FLYWHEEL AND RELATED METHODS**

(56) **References Cited**

U.S. PATENT DOCUMENTS

(71) Applicant: **ICON Health & Fitness, Inc.**, Logan, UT (US)

3,926,430 A * 12/1975 Good, Jr. A63B 69/365
473/229
5,286,243 A * 2/1994 Lapcevic A63B 21/15
482/100

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(Continued)

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FOREIGN PATENT DOCUMENTS

CN 1658929 A 8/2005
CN 1708333 A 12/2005

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(Continued)

OTHER PUBLICATIONS

(21) Appl. No.: **15/019,088**

PCT International Search Report for PCT International Patent Application No. PCT/US2014/029353, mailed Aug. 4, 2014.

(22) Filed: **Feb. 9, 2016**

(Continued)

(65) **Prior Publication Data**

US 2016/0158592 A1 Jun. 9, 2016

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Related U.S. Application Data

(63) Continuation of application No. 14/213,793, filed on Mar. 14, 2014, now Pat. No. 9,254,409.

(Continued)

(51) **Int. Cl.**

A63B 21/00 (2006.01)

A63B 21/22 (2006.01)

(Continued)

(52) **U.S. Cl.**

CPC **A63B 21/225** (2013.01); **A63B 21/005** (2013.01); **A63B 21/0051** (2013.01);

(Continued)

(58) **Field of Classification Search**

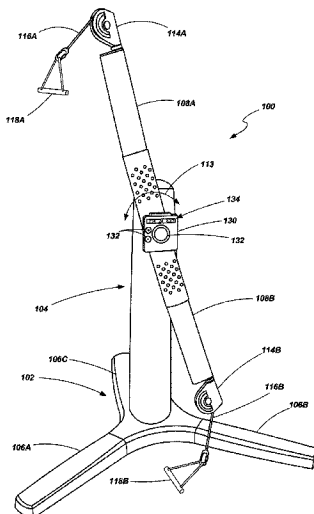
CPC **A63B 21/00**

(Continued)

(57) **ABSTRACT**

Embodiments of a strength training apparatus and related methods are provided. In one embodiment, the strength training apparatus includes a base member and a tower structure coupled with the base member. At least one arm is pivotally coupled with the tower structure. A flywheel and a cable and pulley system are associated with the at least one arm, wherein displacement of at least one cable of the cable and pulley system effects rotation of the flywheel. The strength training apparatus may include a selectively adjustable magnetic braking mechanism associated with a flywheel that is configured to apply a selected resistance to the rotation of the flywheel. A torque sensor may be associated with the flywheel and the measured torque during operation of the apparatus may be used to calculate the work expended in rotating the flywheel. In one embodiment, the calculated work may be expressed in units of watts.

20 Claims, 7 Drawing Sheets



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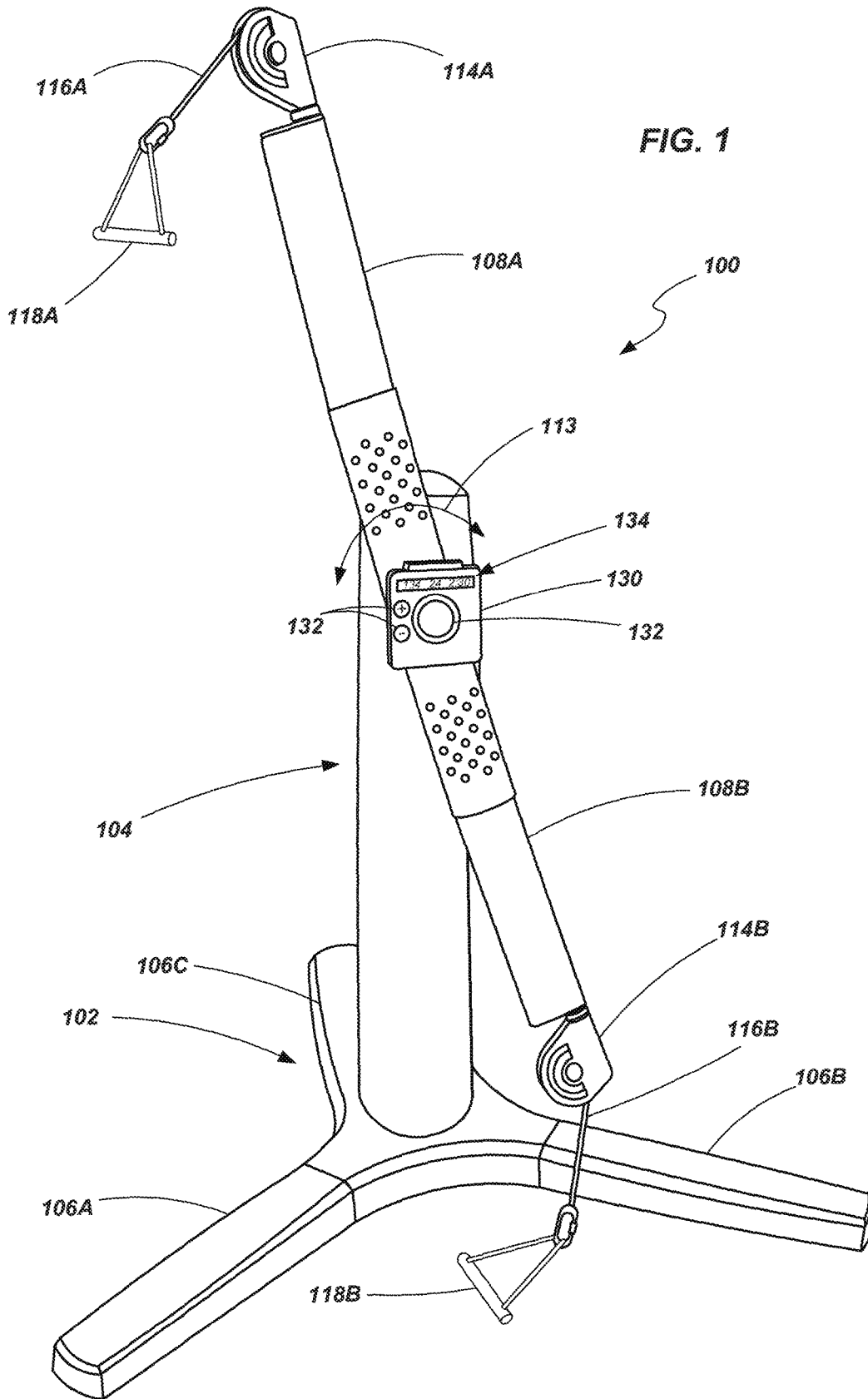
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- Related U.S. Application Data**
- (60) Provisional application No. 61/786,007, filed on Mar. 14, 2013.
- (51) **Int. Cl.**
A63B 21/005 (2006.01)
A63B 21/04 (2006.01)
A63B 23/035 (2006.01)
A63B 23/12 (2006.01)
A63B 24/00 (2006.01)
A63B 71/06 (2006.01)
- (52) **U.S. Cl.**
 CPC *A63B 21/0052* (2013.01); *A63B 21/00076* (2013.01); *A63B 21/00192* (2013.01); *A63B 21/0442* (2013.01); *A63B 21/151* (2013.01); *A63B 21/154* (2013.01); *A63B 21/156* (2013.01); *A63B 21/4035* (2015.10); *A63B 21/4043* (2015.10); *A63B 21/4047* (2015.10); *A63B 21/4049* (2015.10); *A63B 23/03525* (2013.01); *A63B 23/03533* (2013.01); *A63B 23/03541* (2013.01); *A63B 23/12* (2013.01); *A63B 23/1209* (2013.01); *A63B 23/1218* (2013.01); *A63B 23/1227* (2013.01); *A63B 21/0056* (2013.01); *A63B 2024/0065* (2013.01); *A63B 2024/0093* (2013.01); *A63B 2071/0625* (2013.01); *A63B 2071/0675* (2013.01); *A63B 2071/0694* (2013.01); *A63B 2220/54* (2013.01); *A63B 2220/833* (2013.01); *A63B 2225/09* (2013.01)
- (58) **Field of Classification Search**
 USPC 482/97, 100, 67
 See application file for complete search history.
- (56) **References Cited**
 U.S. PATENT DOCUMENTS
 5,354,252 A * 10/1994 Habing A63B 21/0628 482/100
 D352,536 S * 11/1994 Byrd D21/676
- 5,527,245 A 6/1996 Dalebout et al.
 6,491,610 B1 * 12/2002 Henn A63B 21/00 482/130
 6,746,371 B1 6/2004 Brown et al.
 6,857,993 B2 2/2005 Yeh
 7,011,326 B1 3/2006 Schroeder et al.
 7,226,402 B1 * 6/2007 Joya A63B 15/00 473/266
 7,364,538 B2 4/2008 Aucamp
 7,584,673 B2 9/2009 Shimizu
 7,740,563 B2 6/2010 Dalebout et al.
 2002/0013200 A1 1/2002 Sechrest
 2002/0086779 A1 7/2002 Wilkinson
 2003/0032528 A1 2/2003 Wu et al.
 2003/0032531 A1 2/2003 Simonson
 2003/0032535 A1 2/2003 Wang
 2003/0045406 A1 3/2003 Stone
 2005/0009672 A1 1/2005 Yeh
 2005/0049117 A1 3/2005 Rodgers
 2005/0148445 A1 * 7/2005 Carle A63B 21/0615 482/97
 2005/0164837 A1 7/2005 Anderson et al.
 2006/0035755 A1 2/2006 Dalebout et al.
 2007/0015644 A1 1/2007 Aucamp
 2007/0197346 A1 8/2007 Seliber
 2012/0088638 A1 4/2012 Lull
 2013/0196821 A1 8/2013 Watterson et al.
- FOREIGN PATENT DOCUMENTS**
 CN 201516258 6/2010
 SU 1533710 1/1990
 WO 9706859 2/1997
- OTHER PUBLICATIONS**
 Chinese Office Action for Chinese Patent Application No. 201480003701.9 issued on Apr. 6, 2016.
 European Patent Application No. 14768130 office action dated Oct. 11, 2016 with search report.
 * cited by examiner

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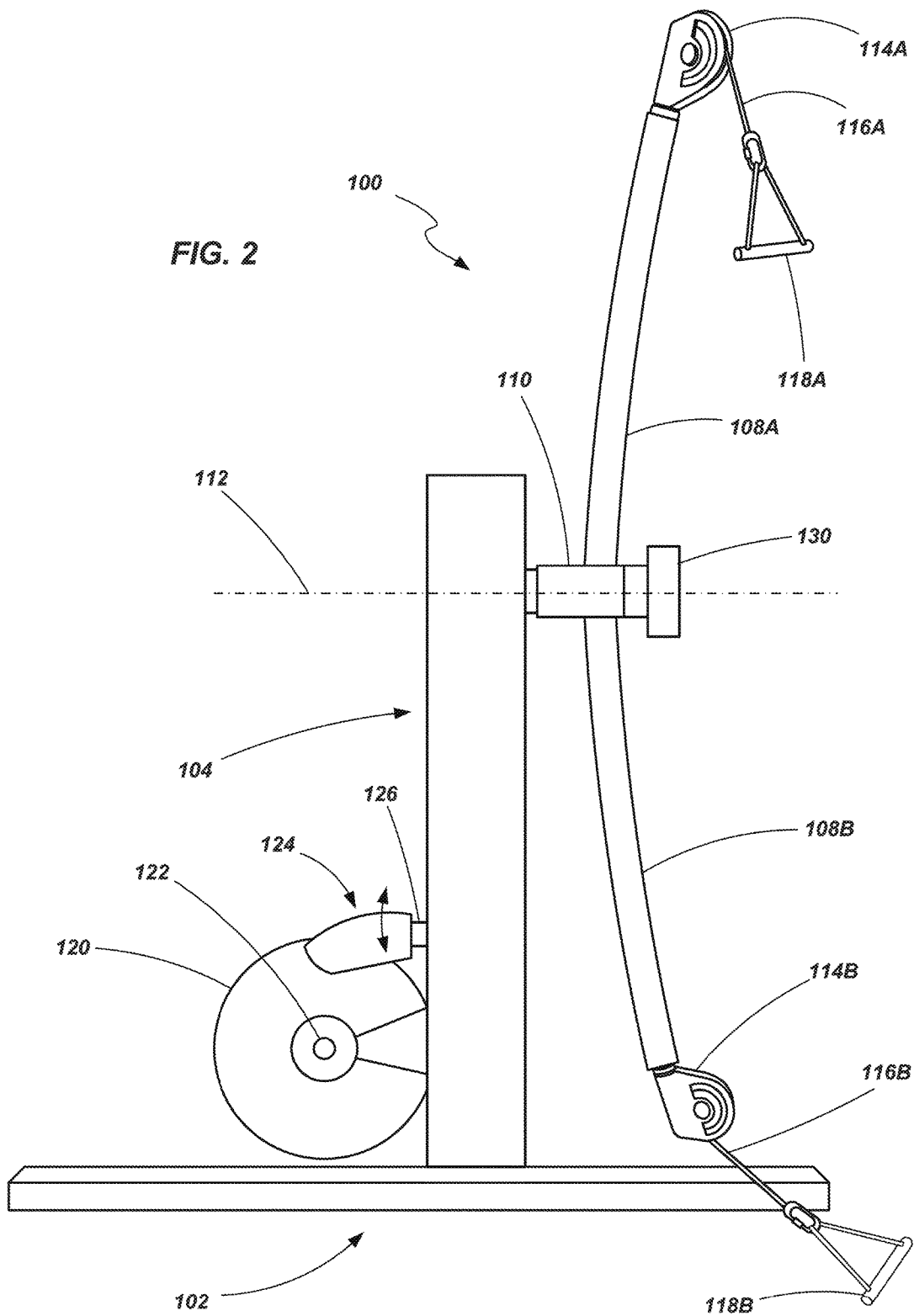


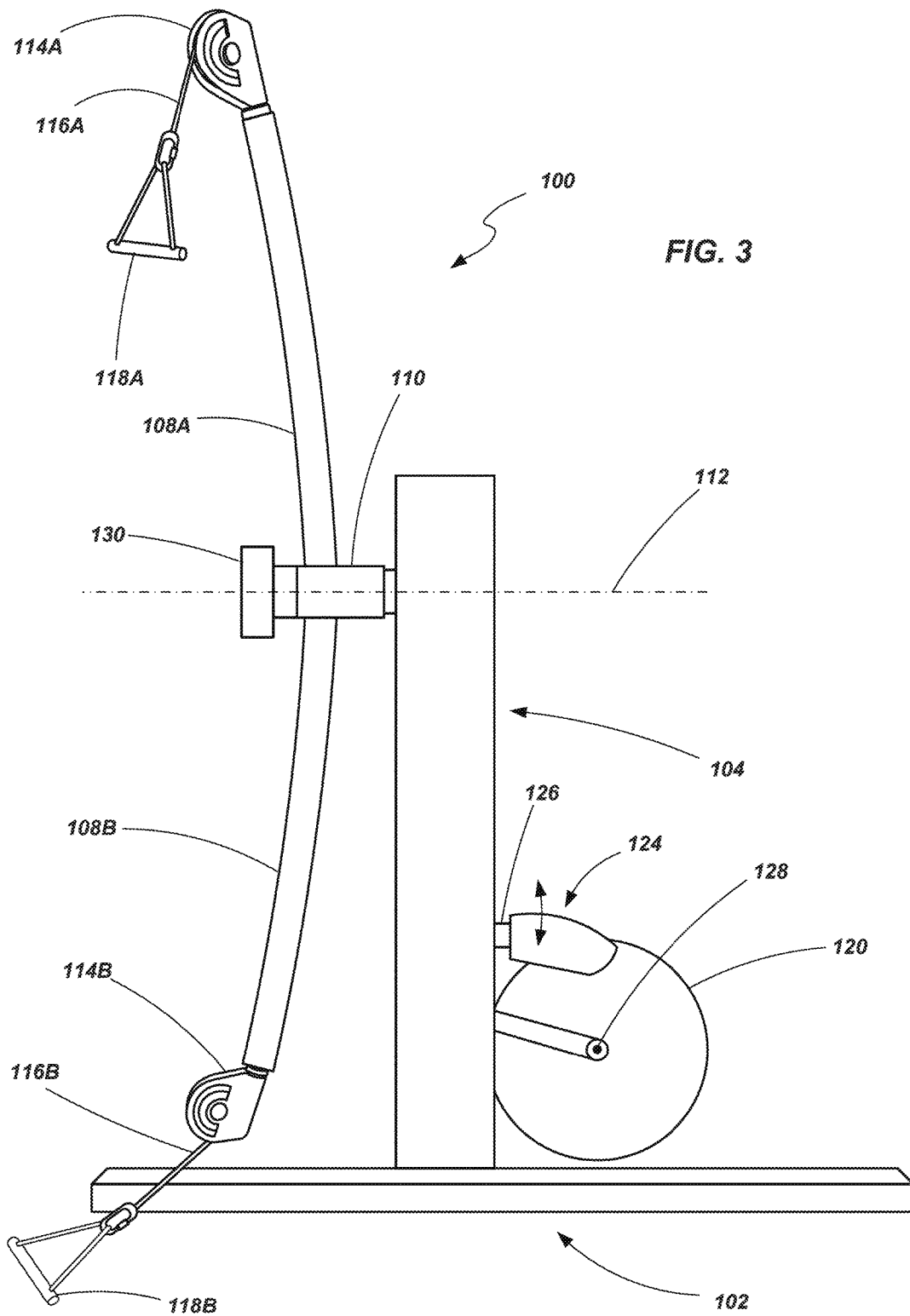
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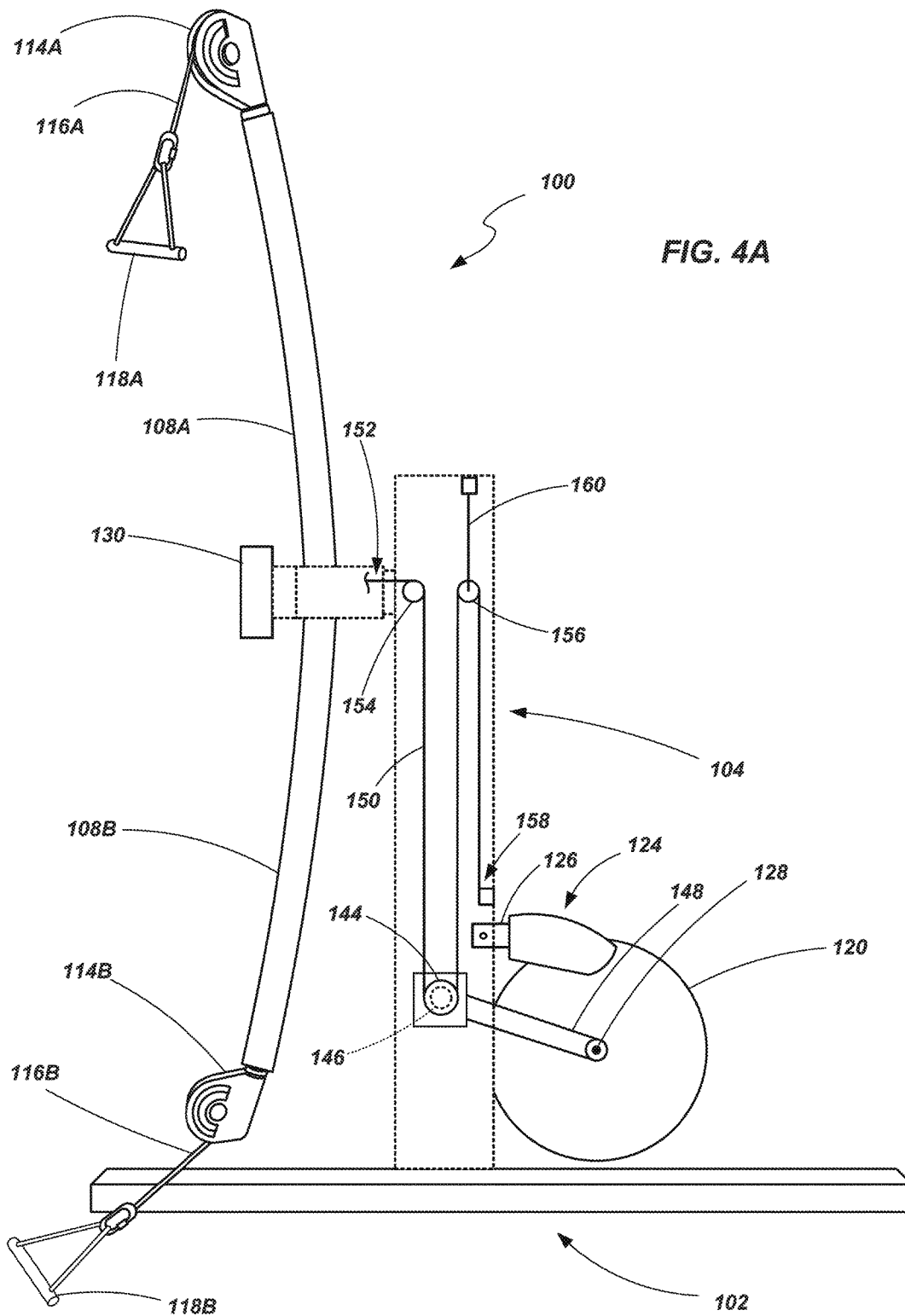


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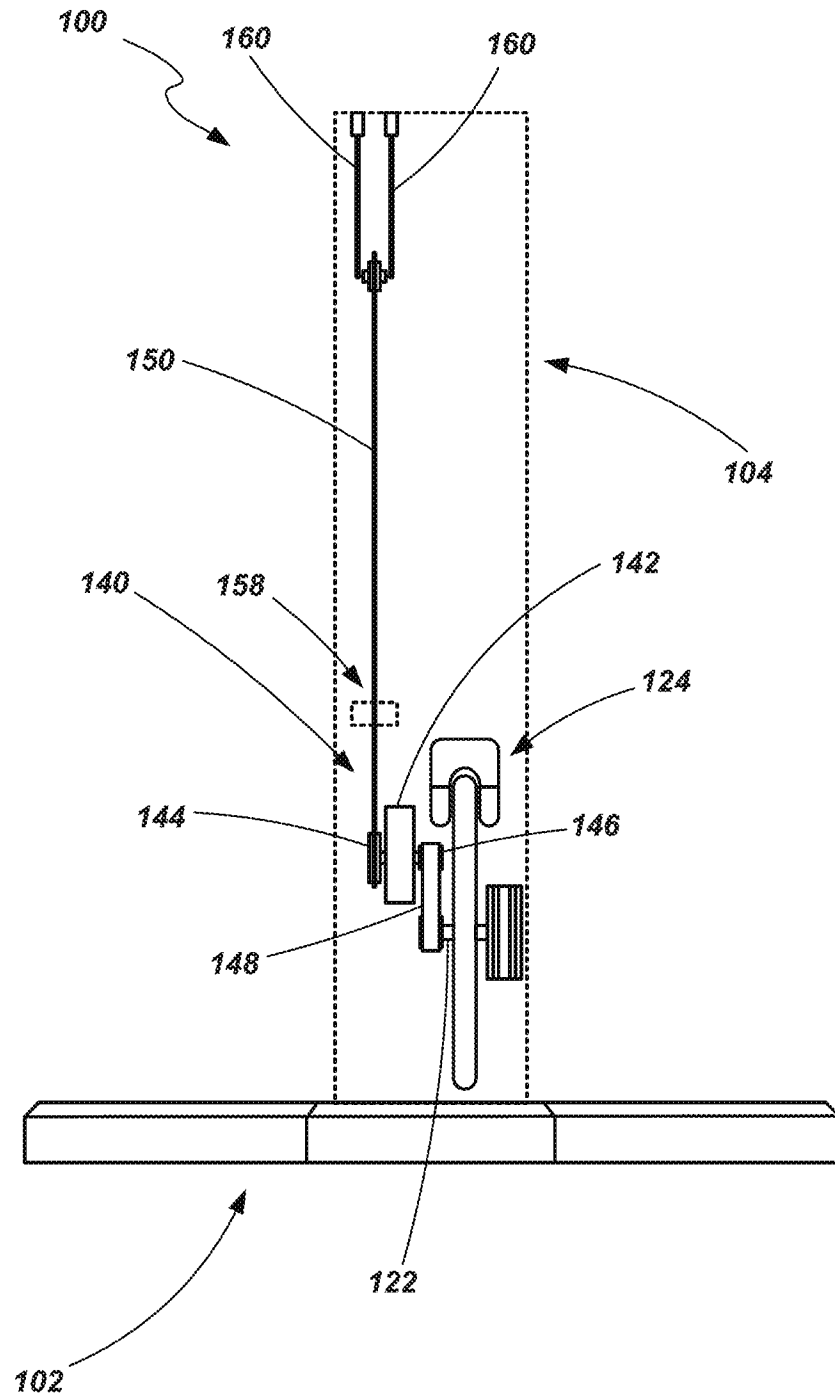
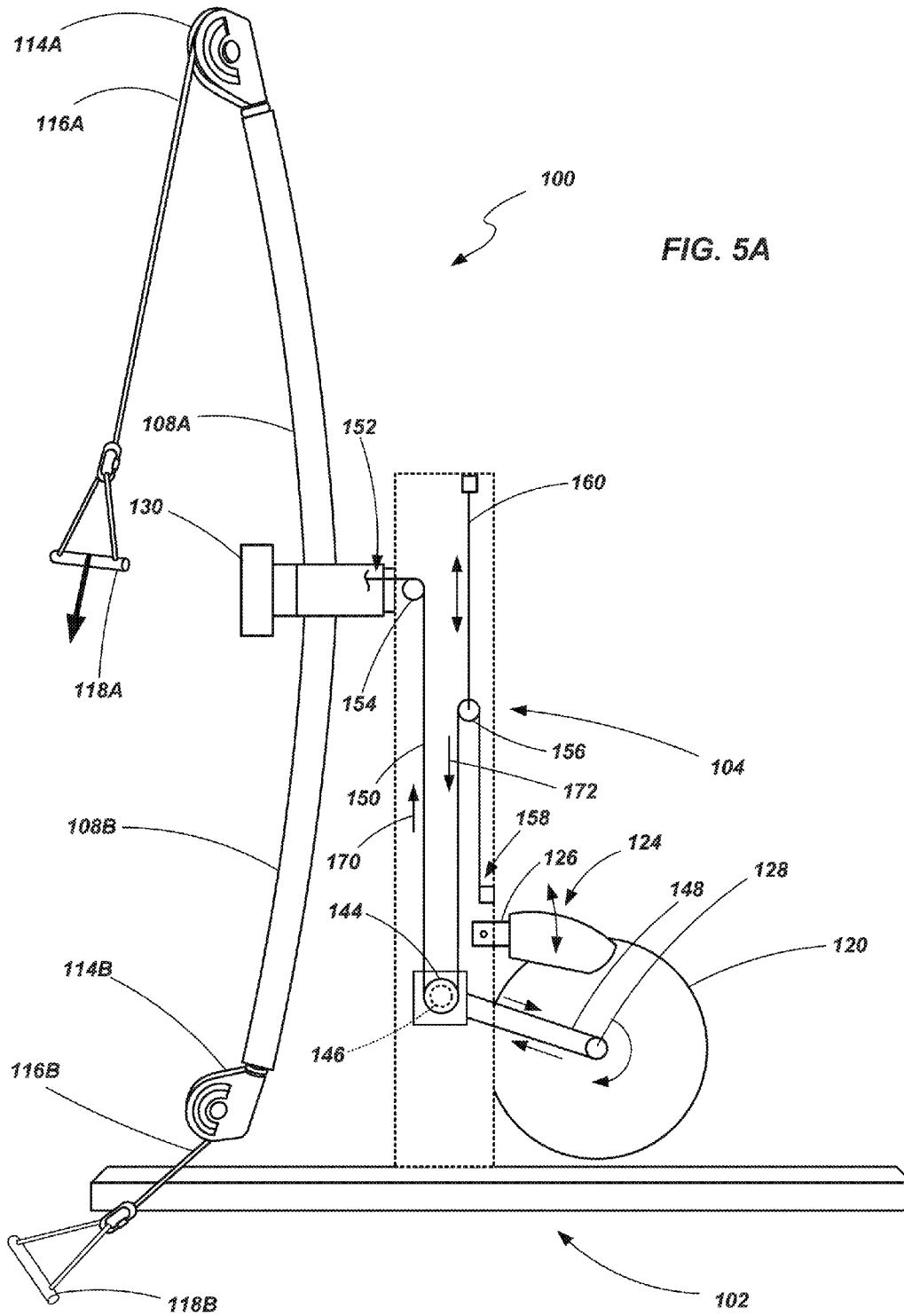


FIG. 4B



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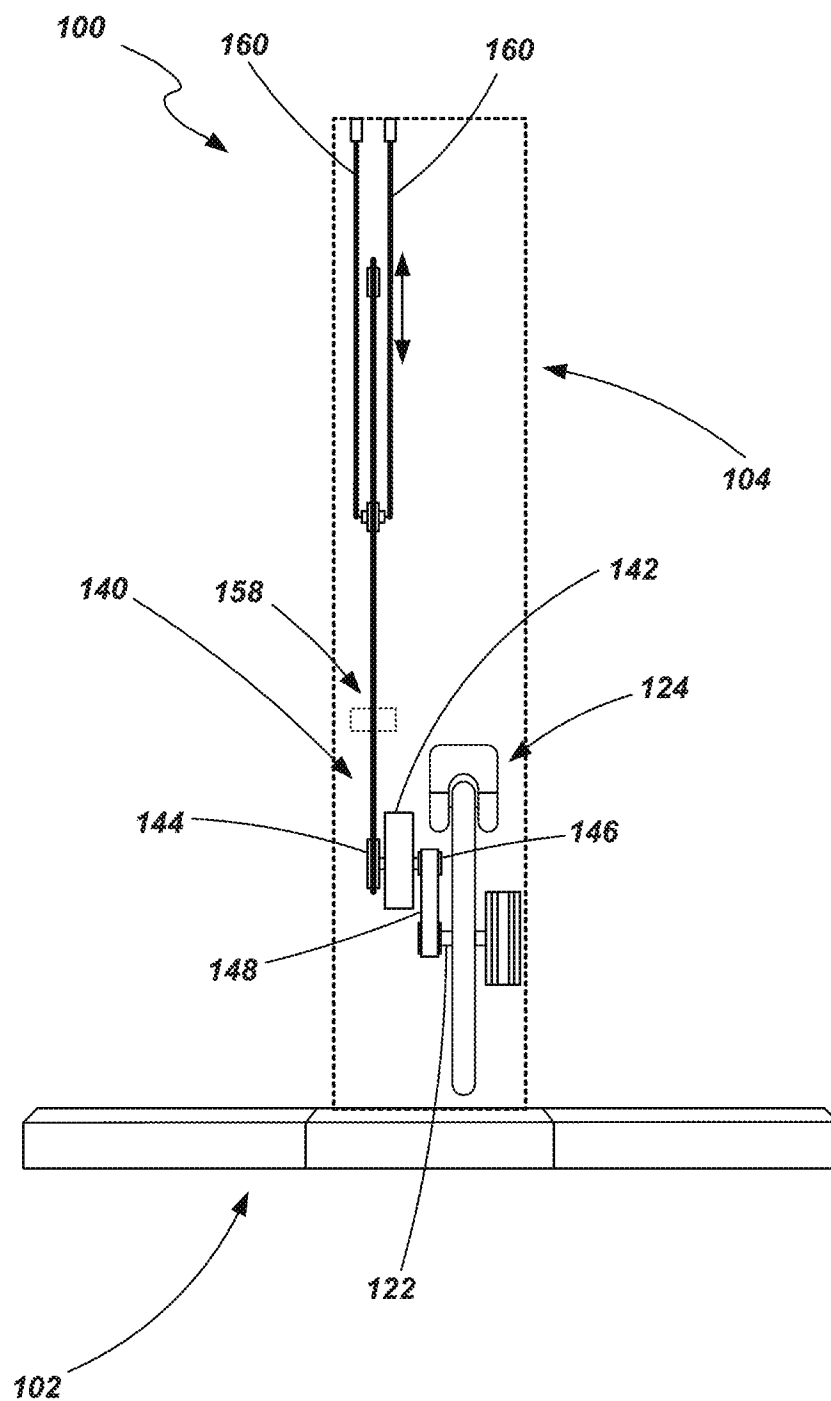


FIG. 5B

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STRENGTH TRAINING APPARATUS WITH FLYWHEEL AND RELATED METHODS

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. application Ser. No. 14/213,793, filed on 14 Mar. 2014, which claims priority to U.S. Provisional Patent application 61/786,007 filed on Mar. 14, 2013. Each of the aforementioned applications are incorporated herein in its entirety by reference.

TECHNICAL FIELD

The present disclosure relates to exercise equipment. More particularly, the present disclosure relates to strength training equipment including a flywheel and to related methods.

BACKGROUND

While there are numerous exercise activities that one may participate in, exercise may be broadly broken into the categories of aerobic exercise and anaerobic exercise. Aerobic exercise generally refers to activities that substantially increase the heart rate and respiration of the exerciser for an extended period of time. This type of exercise is generally directed to enhancing cardiovascular performance. Such exercise usually includes low or moderate resistance to the movement of the individual. For example, aerobic exercise includes activities such as walking, running, jogging, swimming or bicycling for extended distances and extended periods of time.

Anaerobic exercise generally refers to exercise that strengthens skeletal muscles and usually involves the flexing or contraction of targeted muscles through significant exertion during a relatively short period of time and/or through a relatively small number of repetitions. For example, anaerobic exercise includes activities such as weight training, push-ups, sit-ups, pull-ups or a series of short sprints.

When exercising at home or in a gym, aerobic and anaerobic exercise usually involves the use of different types of equipment. For example, aerobic exercise usually involves equipment such as treadmills, ellipticals and bicycles (traditional and stationary) while anaerobic exercise often involves the use of free weights, weight stacks, or other cable and pulley resistance-type systems.

Often, individuals will plan their work-out routines to include both aerobic and anaerobic activities. For example, a person may do anaerobic exercises (e.g., weight lifting and other strength training exercises) on two or three days of the week while doing aerobic exercising (e.g., running, bicycling) on the remaining days of the week. In other instances, an individual may do both aerobic and anaerobic activities during the same day.

One of the difficulties in integrating both aerobic and anaerobic activities is the ability of an individual to efficiently and effectively track their progress. For example, many individuals use aerobic exercise equipment such as a treadmill or an elliptical machine to automatically track the calories that they've burned while using such equipment. However, it is more difficult to track or calculate such information when doing strength training exercises.

A couple of examples of equipment that has tried to combine aerobic exercising with anaerobic exercising are described in U.S. Pat. No. 5,527,245 to Dalebout et al. and U.S. Pat. No. 7,740,563 to Dalebout et al. These patents

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describe a resistance-type strength training apparatus combined with, in one instance, a treadmill, and in another instance an elliptical device.

In view of the foregoing, it would be desirable to provide the ability to track one's progress during exercise in a manner that is applicable to both aerobic and anaerobic activities and which is simple and effective. Additionally, it is a general desire in the industry to provide exercise equipment with new features and enhanced performance.

SUMMARY

In one aspect of the disclosure, a strength training apparatus includes a base member and a tower structure coupled with the base member.

In one or more other aspects that may be combined with any of the aspects herein, may further include at least one arm that is pivotally coupled with the tower structure.

In one or more other aspects that may be combined with any of the aspects herein, may further include a flywheel and a cable and pulley system associated with the at least one arm, wherein displacement of at least one cable of the cable and pulley system effects rotation of the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include a braking mechanism associated with a flywheel and configured to apply a selected resistance to the rotation of the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include a braking mechanism including a magnetic braking mechanism.

In one or more other aspects that may be combined with any of the aspects herein, may further include a torque sensor associated with the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include a console having at least one input device and at least one output device.

In one or more other aspects that may be combined with any of the aspects herein, may further include the console in communication with the braking mechanism, wherein the at least one input device controls the amount of resistance applied to the flywheel by the braking mechanism.

In one or more other aspects that may be combined with any of the aspects herein, may further include the console in communication with the torque sensor, wherein the at least one output device provides an indication of the amount of work expended by a user upon rotation of the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include the at least one output device provides the indication of the amount of work expended in units of watts.

In one or more other aspects that may be combined with any of the aspects herein, may further include the strength training apparatus includes a drive mechanism associated with the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include a clutch mechanism coupled with the flywheel by way of a drive belt.

In one or more other aspects that may be combined with any of the aspects herein, may further include the clutch mechanism enabling the rotation of the flywheel in a first rotational direction upon the displacement of the at least one cable in a first defined direction, but has no effect on the flywheel upon displacement of the at least one cable in a second defined direction, the second defined direction being the opposite of the first defined direction.

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In one or more other aspects that may be combined with any of the aspects herein, may further include the drive mechanism having a drive chain coupled with the cable and pulley system, wherein the drive chain extends about a plurality of sprockets including at least one sprocket that is displaceable relative to the tower.

In one or more other aspects that may be combined with any of the aspects herein, may further include at least one biasing member coupled with the at least one displaceable sprocket.

In one or more other aspects that may be combined with any of the aspects herein, may further include an embodiment where the at least one arm includes a pair of arms, wherein the cable and pulley system includes a first pulley coupled with a first arm of the pair of arms with a first cable extending through the first pulley and a second pulley coupled with the second arm with a second cable extending through the second pulley.

In one or more other aspects that may be combined with any of the aspects herein, may further include the pair of arms maintained in a fixed angular position relative to each other.

In another aspect of the disclosure, a method of conducting strength training includes applying a force to a cable and displacing the cable in a first direction and effecting rotation of a flywheel upon displacement of the cable.

In one or more other aspects that may be combined with any of the aspects herein, may further include a resistance applied to the flywheel and the torque applied to the flywheel being measured, such as by way of a sensor.

In one or more other aspects that may be combined with any of the aspects herein, may further include calculating the work performed, in watts, based at least in part on the measured torque.

In one or more other aspects that may be combined with any of the aspects herein, may further include applying resistance to the flywheel by applying resistance using a magnetic brake.

In one or more other aspects that may be combined with any of the aspects herein, may further include the resistance applied by the magnetic brake being selectively varied.

In one or more other aspects that may be combined with any of the aspects herein, may further include applying a force to a cable including pulling the cable through a pulley, and selectively positioning the pulley at one of a variety of positions prior to pulling the cable through the pulley.

In one or more other aspects that may be combined with any of the aspects herein, may further include a method of tracking work expended during exercising including conducting an aerobic exercise activity and determining the work expended during the aerobic exercise activity and expressing the work expended in units of watts.

In one or more other aspects that may be combined with any of the aspects herein, may further include an embodiment where an anaerobic exercise activity is conducted and the work expended during the anaerobic exercise activity is determined and expressed in units of watts.

In one or more other aspects that may be combined with any of the aspects herein, may further include summing the amount of work expended during the aerobic activity and the amount of work expended during the anaerobic activity.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate various embodiments of the present methods and systems and are a part of

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the specification. The illustrated embodiments are merely examples of the present systems and methods and do not limit the scope thereof.

FIG. 1 is a perspective view of a strength training apparatus;

FIG. 2 is a first side view of the strength training apparatus shown in FIG. 1;

FIG. 3 is another side view of the strength training apparatus shown in FIG. 1;

FIGS. 4A and 4B show a side view and a rear view, respectively, of the apparatus shown in FIG. 1, including various components, when the apparatus is in a first state;

FIGS. 5A and 5B show a side view and a rear view, respectively, of the apparatus shown in FIG. 1, including various components, when the apparatus is in a second state;

Throughout the drawings, identical reference numbers designate similar, but not necessarily identical, elements.

DETAILED DESCRIPTION

Referring to FIGS. 1-3, a strength training apparatus **100** is provided. The apparatus **100**, according to certain embodiments, includes a base member **102** and a tower or support structure **104** coupled to, and extending upward from, the base member **102**. The base may be configured to include a plurality of legs **106A-106C** extending away from each other to provide a stable base or platform for the apparatus **100** and to support the apparatus **100** when forces are applied to it by someone using the apparatus **100** to exercise. In the embodiment shown in FIGS. 1-3, the base member **102** includes three legs. However, it is noted that other configurations are contemplated.

A pair of arms **108A** and **108B** are pivotally coupled to the tower **104** by way of a bearing **110** or other mechanical structure. The bearing **110** enables the arms **108A** and **108B** to rotate about a defined axis **113** (FIGS. 2 and 3) relative to the tower **104** and base member **102** as indicated by directional arrow **112** (FIG. 1). In one embodiment, the arms **108A** and **108B** may be configured to maintain a constant angular relationship relative to each other as they are rotated about the axis **112** (e.g., they may continually extend in substantially opposite directions from each other). In another embodiment, each arm **108A** and **108B** may be selectively positionable (manually, or by a motor or other actuator (not shown)) independent of the other so that they may be positioned at any of a variety of angles relative to each other.

The apparatus **100** also includes a pair of pulleys **114A** and **114B**, one being pivotally coupled to the end of each arm **106A** and **106B**. Cables **116A** and **116B** extend through each pulley **114A** and **114B** and are coupled with handles **118A** and **118B**. As will be described in further detail below, the handles **118A** and **118B**, the cables **116A** and **116B** and the pulleys **114A** and **114B** are part of a cable/pulley system that provides resistance to an individual that is using the apparatus **100** for strength training.

As seen in FIGS. 2 and 3, a flywheel **120** is coupled to either the base member **102** or the tower **104** (or to both) and configured to rotate about a shaft **122**. A resistance or braking mechanism **124** is positioned adjacent the flywheel **122** and is selectively adjustable so as to apply a desired level of resistance to the rotation of the flywheel **120**. Various types of braking mechanism **124** may be used including, in one embodiment, straps or pads that apply friction to the flywheel **120**. In one embodiment, a magnetic

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brake (sometimes referred to as an eddy current brake) may be used to provide and adjustable level of resistance applied to the flywheel 120.

When the braking mechanism 124 is configured as a magnetic mechanism it may include an arm 126 that is pivotally coupled with the tower 104 and which contains a plurality of magnets arranged to provide a desired magnetic flux. As the arm 126 is rotated relative to tower 104 (and, thus, the flywheel 120), the magnetic flux through which the flywheel 120 rotates changes, thereby altering the amount of rotational resistance experienced by the flywheel 120.

The flywheel 120, when configured to interact with a magnetic braking mechanism, may include ferrous components, non-ferrous components, or both. In one embodiment, the flywheel 120 may include a relatively dense ferrous component to impart a desired level of rotational inertia to the flywheel. The flywheel 120 may also include a nonferrous component to provide increased braking resistance when used with a magnetic brake mechanism. For example, one embodiment may include a portion that is formed of cast iron (a ferrous material) to provide the desired rotational inertia with another portion formed of an aluminum material (to provide increased braking response to the magnetic mechanism). One such configuration of a flywheel, as well as an associated magnetic braking mechanism, is described by U.S. Patent Application Publication No. 2012/0088638 to Lull (application Ser. No. 13/267,719), the disclosure of which is incorporated by reference herein in its entirety.

A torque sensor 128 may be associated with the shaft 122 to determine the amount of torque applied to the flywheel by a drive mechanism (discussed below). Various types of torque sensors may be utilized. One example of a torque sensor includes that which is described in U.S. Pat. No. 7,011,326 to Schroeder et al., the disclosure of which is incorporated by reference herein in its entirety. Another example of a torque sensor includes that which is described in U.S. Pat. No. 7,584,673 to Shimizu, the disclosure of which is incorporated by reference herein in its entirety.

The apparatus further includes a control panel 130 which may be located adjacent the bearing 110 or some other convenient location (e.g., on the tower 104). The control panel 130 may include various input devices 132 (e.g., buttons, switches or dials) and output devices 134 (e.g., LED lights, displays, alarms) to provide means of interaction with a user of the apparatus 100. The control panel may further include connections for communication with other devices. The controller may include a processor and memory to provide various functions in controlling components of the apparatus 100 (e.g., the braking mechanism), in communicating with various components (e.g., the torque sensor) and making certain calculations as will be discussed below.

In one example, an input device 132 of the control panel 130 may be used to set a desired resistance level that is to be applied to the flywheel 120 by controlling an actuating member associated with the braking mechanism 124. An output device 134 (e.g., a display) may indicate the current or selected level of resistance. An output device 134 of the control panel 130 may also provide an indication of the amount of work performed within a period of time calculated, for example, based on the torque applied to the flywheel 120 as measured by the torque sensor 128.

Referring now to FIGS. 4A and 4B, a side view and a rear view of the apparatus 100 is shown with various components which may be disposed within the tower 104 or otherwise arranged to assist in driving flywheel 120. It is noted that FIG. 4B does not depict the arms 108A and 108B (and associated components) for purposes of clarity and conve-

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nience. A drive mechanism 140 may include a clutch 142 having an input shaft 144 and an output shaft 146. A drive belt 148 (or drive chain or other similar drive structure) may extend about the output shaft 146 and also about the shaft 122 of the flywheel 120 (or associated pulleys coupled with the shafts). The clutch is configured such that, when the input shaft 144 is rotated in a first specified direction, the output shaft 146 is likewise rotated in a specified direction displacing the drive belt 148 and, ultimately, driving the flywheel 120 in a desired direction. However, if the input shaft 144 is rotated in a second direction, opposite that of the first direction, it has no effect on the output shaft 146. Rather, the output shaft is enabled to continue rotating in its initially specified direction and does not reverse directions. It is noted that, in other embodiments, the clutch 142 may be coupled directly to the flywheel 120.

A drive chain 150 (or drive belt or cable or other appropriate structure) has a first end 152 that is coupled to the cables 116A and 116B that extend through pulleys 114A and 114B and either extend through, or adjacent to, the arms 108A and 108B. The drive chain 150 extends through several pulleys or sprockets including, for example, a first sprocket 154, the input shaft 144 (or an associated pulley or sprocket coupled therewith) and a second sprocket 156. A second end 158 of the drive chain 150 may be fixed, for example, to a frame or other component associated with the tower 104. In the embodiment shown in FIGS. 4A and 4B, the first sprocket 154 is rotatable about an axis which is fixed relative to the tower 104. The second sprocket 156 is rotatable about an axis which is displaceable relative to the tower 104. For example, one or more biasing members 160 may be coupled between the second sprocket 156 and the tower 104 (or some component thereof) enabling the sprocket 156 to be displaced relative to the tower 104. Guide members may be used to help constrain or control the displacement of the sprocket along a desired path.

Referring briefly to FIGS. 5A and 5B, views similar to those depicted in FIGS. 4A and 4B, respectively, show certain components in a second position or state. Specifically, FIG. 5A depicts the displacement of a handle 118A due to application of a force by an individual during exercise. Displacement of the handle 118A results in displacement of the associated cable 116A and, ultimately, displacement of the drive chain 150. As indicated in FIG. 5A, a first portion of the drive chain 150 is displaced upwards towards the first sprocket 154 as indicated by directional arrow 170 while a second portion of the drive chain 150 is displaced downwards away from the second sprocket 156 and towards the input shaft 144 as indicated by directional arrow 172. It is noted that this displacement of the drive chain also includes the downward displacement of the second sprocket 156 against the force of the biasing members 160 as seen in both FIGS. 5A and 5B. The displacement of the drive chain 150 results in the rotation of the input shaft 144, actuating the drive mechanism 140 such that the drive belt 148 drives the flywheel 120.

Upon release of the force applied to the handle 118A, the biasing members 160 pull the second sprocket 156 back to its previous position bringing the various components (e.g., drive chain 150, cable 116A and handle 118A) back the positions shown in FIGS. 4A and 4B. However, as noted above, the return of the drive chain 150 to its previously position does not cause the flywheel 120 to rotate in the opposite direction or otherwise hinder its continued rotation due to the directional preference of the clutch mechanism 142. It is noted that, while the example shown in FIGS. 5A and 5B is described in terms of one particular handle (i.e.,

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118A) being displaced, the same functionality applies to the displacement to the other handle (i.e., 118B) or to both of them being substantially simultaneously displaced.

INDUSTRIAL APPLICABILITY

During exercise, many individuals desire to focus on anaerobic strength training, or to integrate anaerobic strength training with aerobic work-outs. One of the difficulties in mixing both aerobic and anaerobic activities is the ability of an individual to efficiently and effectively track their progress. For example, many individuals use aerobic exercise equipment such as a treadmill, an elliptical machine or a pedometer to help track the calories that they've burned while using such equipment. However, it is more difficult to track or calculate such information when doing strength training type of exercises.

The exercise apparatus provided herein provides a strength training apparatus that enables a variety of exercises while also providing the ability to track the work performed by an individual during their exercise session. By positioning the adjustable arms at different locations relative to the tower, different types of exercises may be conducted. For example, due to the adjustability of the arms/pulleys, the exercise apparatus may be used to perform exercises including, but not limited to, standing abdominal crunches, curls and other bicep exercises, lat pull-downs, chest presses, incline and decline presses, overhead presses, triceps extensions, shoulder extensions, leg extensions, leg curls, abduction and adduction exercises, and a variety of other exercises, including variations of the examples provided.

Additionally, the use of a flywheel in connection with a strength training apparatus provides a different form of resistance than in conventional strength training exercises, one that can be measured, tracked and incorporated into a planned exercise routine. The flywheel, combined with a braking mechanism such as a magnetic brake, enables considerable flexibility in setting the desired resistance during exercise. In many conventional strength training exercises, the amount of resistance provided (e.g., by free weights, weight stacks or resistance bands) is only adjustable in set increments (e.g., 5 or 10 pound increments). The use of a flywheel with a variable resistance braking mechanism enables fine tuning of the resistance over a continuous spectrum between two defined limits.

The use of a torque sensor in conjunction with the flywheel enables the calculation of work, power or energy so that, for example, a user of the apparatus may determine their performance level while using the exercise apparatus. In one particular example, the power expended during an exercise session may be expressed in watts (i.e., joules/sec (J/s) or newton meters I sec (N*m/s). A user of the machine can review the power expended during an exercise session from a display (or other output device) associated with the exercise apparatus and then compare their performance to a goal or a benchmark.

Such a way of tracking the effort expended during an anaerobic exercise routine provides more insight into the progress of the individual than just the number of repetitions completed during a given work-out session. If desired, other units may be utilized to track the energy expended by an individual during a work-out session. For example, rather than expressing the work-out performance in terms of watts (units of power), it could be expressed in terms of joules (units of work).

This information could be used with information from other work-out activities, including aerobic exercise, to

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consistently monitor the performance of an individual over a desired period of time. For example, rather than expressing the performance of an individual on a treadmill or an elliptical machine in terms of calories, those performances may similarly be provided in terms of watts (or another selected unit) so that all types of exercise activity may be monitored uniformly. An individual may then customize their exercise routine based, for example, on the amount of work that is to be performed regardless of whether that work occurs during an aerobic or an anaerobic activity.

One example of customizing a work-out that may be utilized in conjunction with the exercise apparatus described herein is set forth in U.S. patent application Ser. No. 13/754,361, filed on Jan. 30, 2013, the disclosure of which is incorporated by reference herein in its entirety. One particular example of tracking a work-out across various exercise equipment and which may be utilized in conjunction with the exercise apparatus described herein is set forth in U.S. Pat. No. 6,746,371 to Brown et al., the disclosure of which is incorporated by reference herein in its entirety.

What is claimed is:

1. A strength training apparatus, comprising:

a base member;
a tower structure coupled to the base member;
at least one arm coupled to the tower structure;
a pulley being coupled to the at least one arm;
a cable extending through the pulley;
a handle coupled to a first end of the cable;
a flywheel connected to the tower structure;
a magnetic braking mechanism that resists movement of the flywheel; and
a console in communication with the magnetic braking mechanism;
wherein displacement of the handle results in rotation of the flywheel.

2. The strength training apparatus of claim 1, further including a biasing member that returns the handle without causing rotation of the flywheel.

3. The strength training apparatus of claim 2, wherein the biasing member is in communication with a sprocket, and the cable extends through the sprocket.

4. The strength training apparatus of claim 3, wherein the sprocket is displaceable relative to the tower structure when the handle is pulled.

5. The strength training apparatus of claim 1, wherein the at least one arm is pivotally coupled to the tower structure.

6. The strength training apparatus of claim 5, wherein the at least one arm is movable with respect to the tower structure to position the handle at multiple locations with respect to the tower structure.

7. The strength training apparatus of claim 1, further including a torque sensor proximate the flywheel.

8. The strength training apparatus of claim 7, wherein the console is configured to provide an indication of an amount of work upon rotation of the flywheel.

9. The strength training apparatus of claim 7, wherein the console further includes an input for selecting an amount of resistance applied by the magnetic braking mechanism to the flywheel.

10. The strength training apparatus of claim 1, wherein the cable includes a second end that is fixed to the tower structure.

11. The strength training apparatus of claim 1, wherein the cable is in communication with a drive mechanism, and the drive mechanism is attached to a shaft supporting the flywheel through a drive belt.

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12. The strength training apparatus of claim 11, wherein the drive mechanism includes an input shaft and an output shaft.

13. The strength training apparatus of claim 12, wherein the input shaft is rotational in a first direction and a second direction opposite the first direction, and the output shaft is rotational in just the first direction.

14. A strength training apparatus, comprising:

a base member;

a tower structure couple to the base member;

at least one arm coupled to the tower structure;

a pulley being coupled to the at least one arm;

a cable extending through the pulley;

a handle coupled to a first end of the cable;

a flywheel connected to the tower structure;

a magnetic braking mechanism that resists movement of the flywheel;

a console in communication with the magnetic braking mechanism; and

a drive mechanism in communication with the cable, the drive mechanism further including:

an input shaft;

a concentric output shaft disposed within the input shaft;

wherein the drive mechanism is in communication with the flywheel through a drive belt;

wherein the input shaft is rotational in a first direction and a second direction opposite the first direction, and the concentric output shaft is rotational in just the first direction;

wherein displacement of the handle results in rotation of the flywheel.

15. The strength training apparatus of claim 14, wherein the cable includes a second end that is fixed to the tower structure.

16. The strength training apparatus of claim 14, further a biasing member that returns the handle without causing rotation of the flywheel.

17. The strength training apparatus of claim 16, wherein the biasing member is in communication with a sprocket that supports a portion of the cable.

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18. The strength training apparatus of claim 17, wherein the sprocket is displaceable relative to the tower structure when the handle is pulled.

19. The strength training apparatus of claim 14, further including:

a torque sensor proximate the flywheel;

wherein the console is configured to provide an indication of an amount of work performed upon rotation of the flywheel.

20. A strength training apparatus, comprising:

a base member;

a tower structure couple to the base member;

at least one arm coupled to the tower structure;

a pulley being coupled to the at least one arm;

a cable extending through the pulley;

the cable includes a second end that is fixed to the tower structure;

a handle coupled to a first end of the cable;

a flywheel connected to the tower structure;

a magnetic braking mechanism that resists movement of the flywheel;

a console in communication with the magnetic braking mechanism;

a drive mechanism in communication with the cable, the drive mechanism further including:

an input shaft;

a output shaft disposed within the input shaft;

a biasing member that returns the handle without causing rotation of the flywheel;

a sprocket that supports a portion of the cable is in communication with the biasing member; and

the sprocket is displaceable relative to the tower structure when the handle is pulled;

wherein the drive mechanism is in communication with the flywheel through a drive belt;

wherein the input shaft is rotational in a first direction and a second direction opposite the first direction, and the output shaft is rotational in just the first direction;

wherein displacement of the handle results in rotation of the flywheel.

* * * * *

EXHIBIT 2



US009403047B2

(12) **United States Patent**
Olson et al.

(10) **Patent No.:** **US 9,403,047 B2**
(45) **Date of Patent:** **Aug. 2, 2016**

(54) **MAGNETIC RESISTANCE MECHANISM IN A CABLE MACHINE**

A63B 24/0062 (2013.01); *A63B 71/0622* (2013.01); *A63B 2220/17* (2013.01); *A63B 2220/40* (2013.01); *A63B 2220/805* (2013.01); *A63B 2230/75* (2013.01)

(71) Applicant: **ICON Health & Fitness, Inc.**, Logan, UT (US)

(58) **Field of Classification Search**

CPC *A63B 24/00*; *A63B 24/0062*; *A63B 71/0622*; *A63B 21/00192*; *A63B 21/154*; *A63B 21/4035*; *A63B 21/0051*; *A63B 21/153*; *A63B 21/225*; *A63B 21/4043*; *A63B 2220/17*; *A63B 2220/40*; *A63B 2220/805*; *A63B 23/1245*; *A63B 23/03541*; *A63B 23/03566*
See application file for complete search history.

(72) Inventors: **Michael L. Olson**, Providence, UT (US);
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(73) Assignee: **ICON Health & Fitness, Inc.**, Logan, UT (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,039,091 A 8/1991 Johnson
5,588,938 A 12/1996 Schneider et al.
9,011,291 B2 * 4/2015 Birrell *A63B 71/0622*
482/1

(21) Appl. No.: **14/582,493**

(22) Filed: **Dec. 24, 2014**

(65) **Prior Publication Data**

US 2015/0182773 A1 Jul. 2, 2015

(Continued)

Related U.S. Application Data

(60) Provisional application No. 61/920,834, filed on Dec. 26, 2013.

FOREIGN PATENT DOCUMENTS

WO 2007015096 5/2007

OTHER PUBLICATIONS

Exxentric, Movie Archives, obtained from <http://exxentric.com/movies/> on Sep. 18, 2015.

(Continued)

(51) **Int. Cl.**

A63B 24/00 (2006.01)
A63B 21/00 (2006.01)
A63B 23/12 (2006.01)
A63B 21/005 (2006.01)
A63B 21/22 (2006.01)

(Continued)

Primary Examiner — Glenn Richman

(74) Attorney, Agent, or Firm — Holland & Hart LLP

(57)

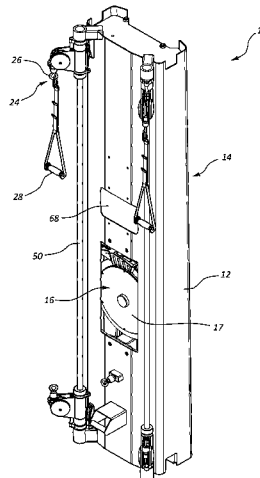
ABSTRACT

A cable exercise machine includes a first pull cable and a second pull cable incorporated into a frame. Each of the first pull cable and the second pull cable are linked to at least one resistance mechanism. The at least one resistance mechanism includes a flywheel and a magnetic unit arranged to resist movement of the flywheel.

(52) **U.S. Cl.**

CPC *A63B 21/00192* (2013.01); *A63B 21/0051* (2013.01); *A63B 21/153* (2013.01); *A63B 21/154* (2013.01); *A63B 21/225* (2013.01); *A63B 21/4035* (2015.10); *A63B 21/4043* (2015.10); *A63B 23/03541* (2013.01); *A63B 23/03566* (2013.01); *A63B 23/1245* (2013.01);

19 Claims, 7 Drawing Sheets



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(51)	Int. Cl.		2006/0148622	A1	7/2006	Chen
	<i>A63B 23/035</i>	(2006.01)	2009/0036276	A1	2/2009	Loach
	<i>A63B 71/06</i>	(2006.01)	2012/0065034	A1	3/2012	Loach
			2013/0337981	A1	12/2013	Habing

(56) **References Cited**

OTHER PUBLICATIONS

U.S. PATENT DOCUMENTS

PCT/US2014/072390, International Search Report, Mar. 27, 2015.

2003/0032535	A1	2/2003	Wang et al.	
2003/0181293	A1 *	9/2003	Baatz	A63B 24/00
				482/63

* cited by examiner

U.S. Patent

Aug. 2, 2016

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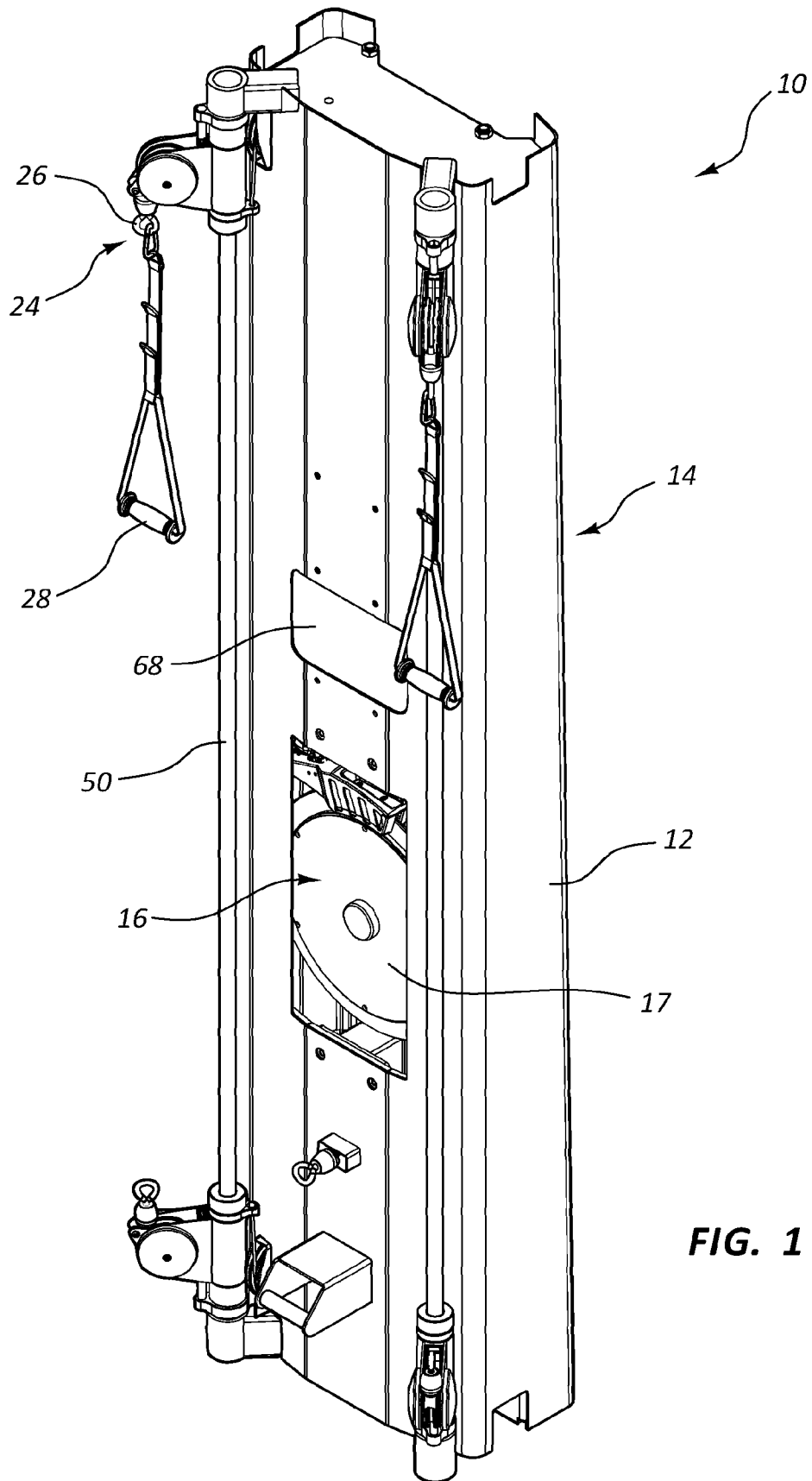


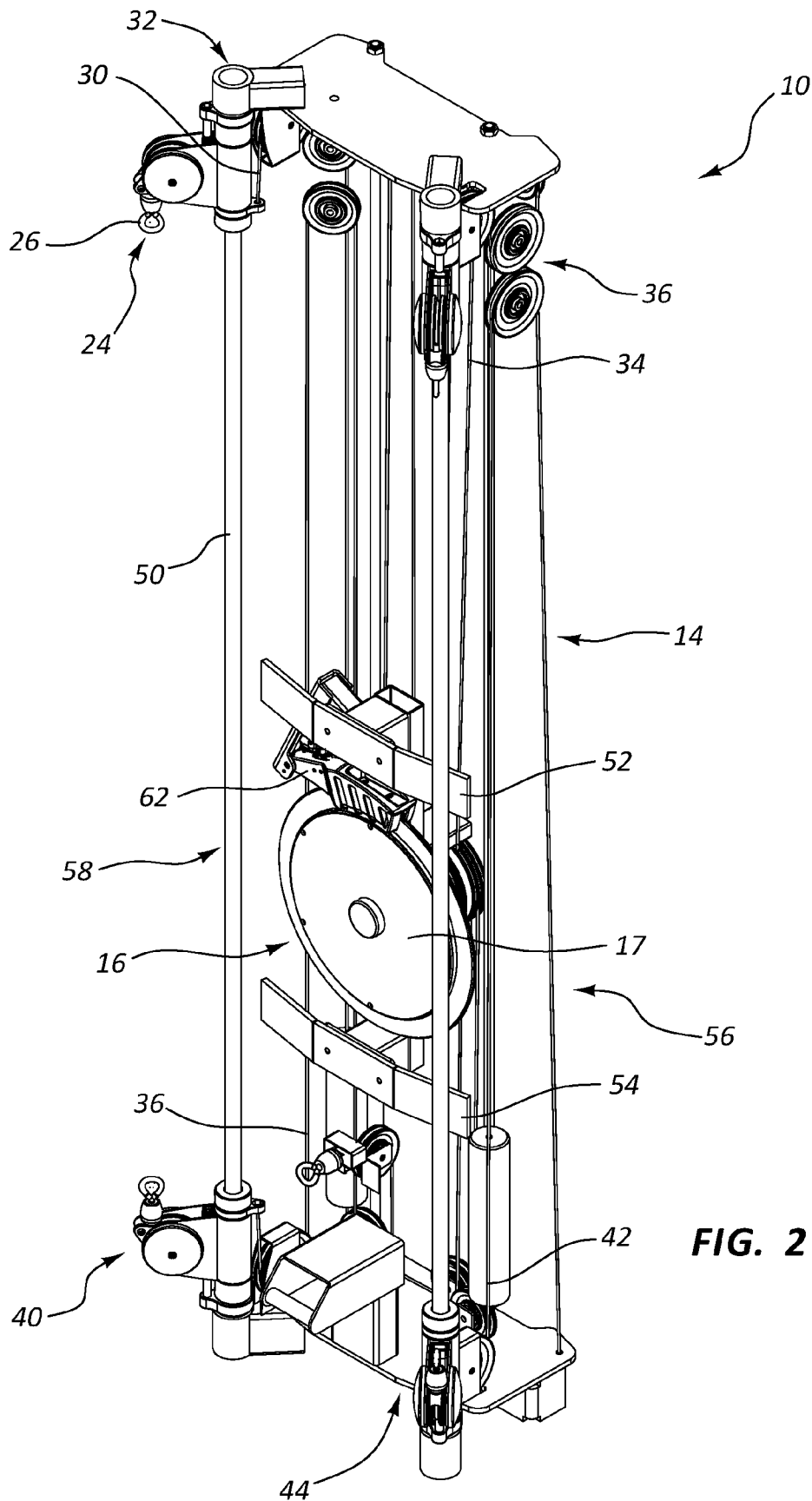
FIG. 1

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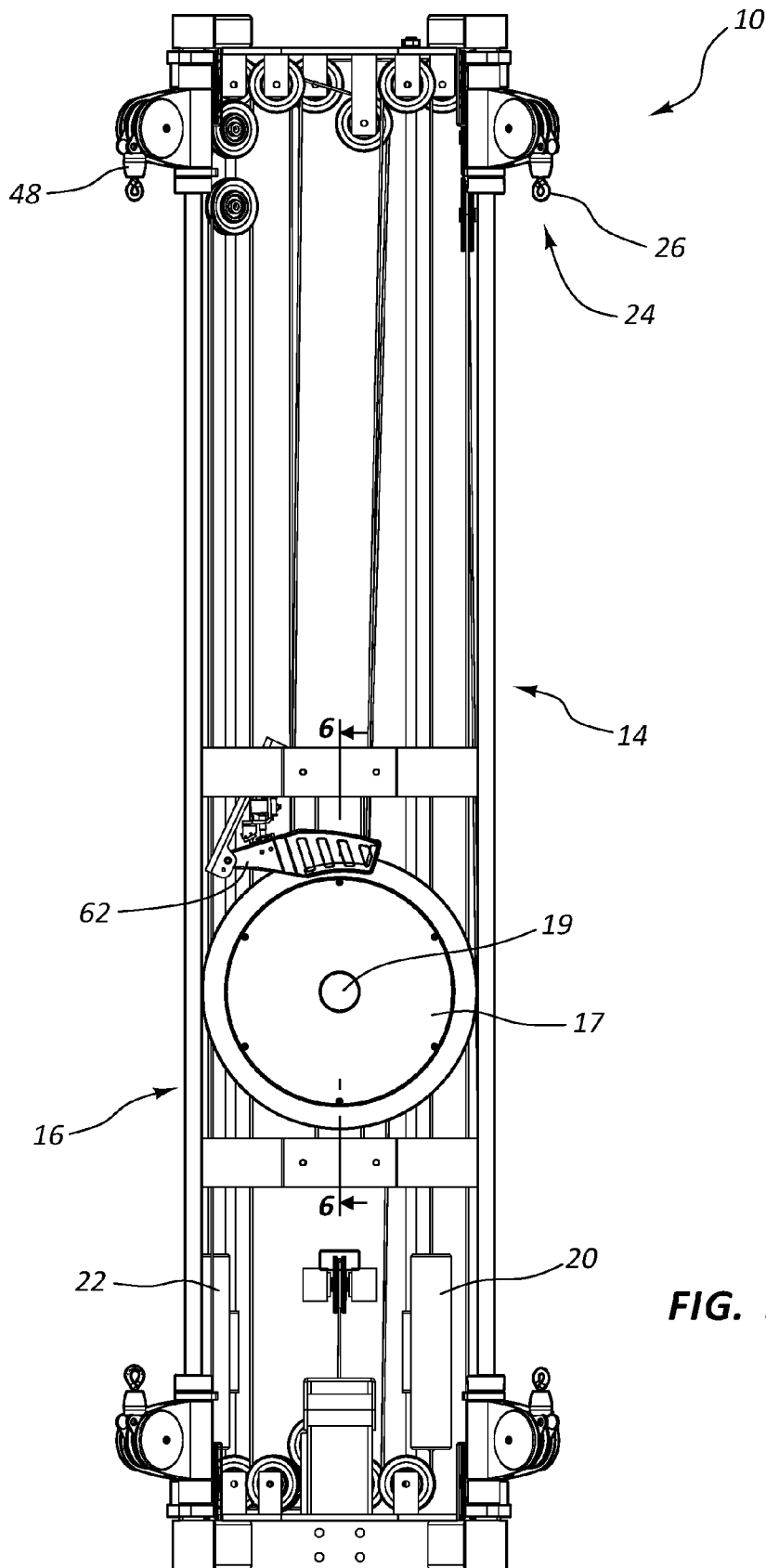


FIG. 3

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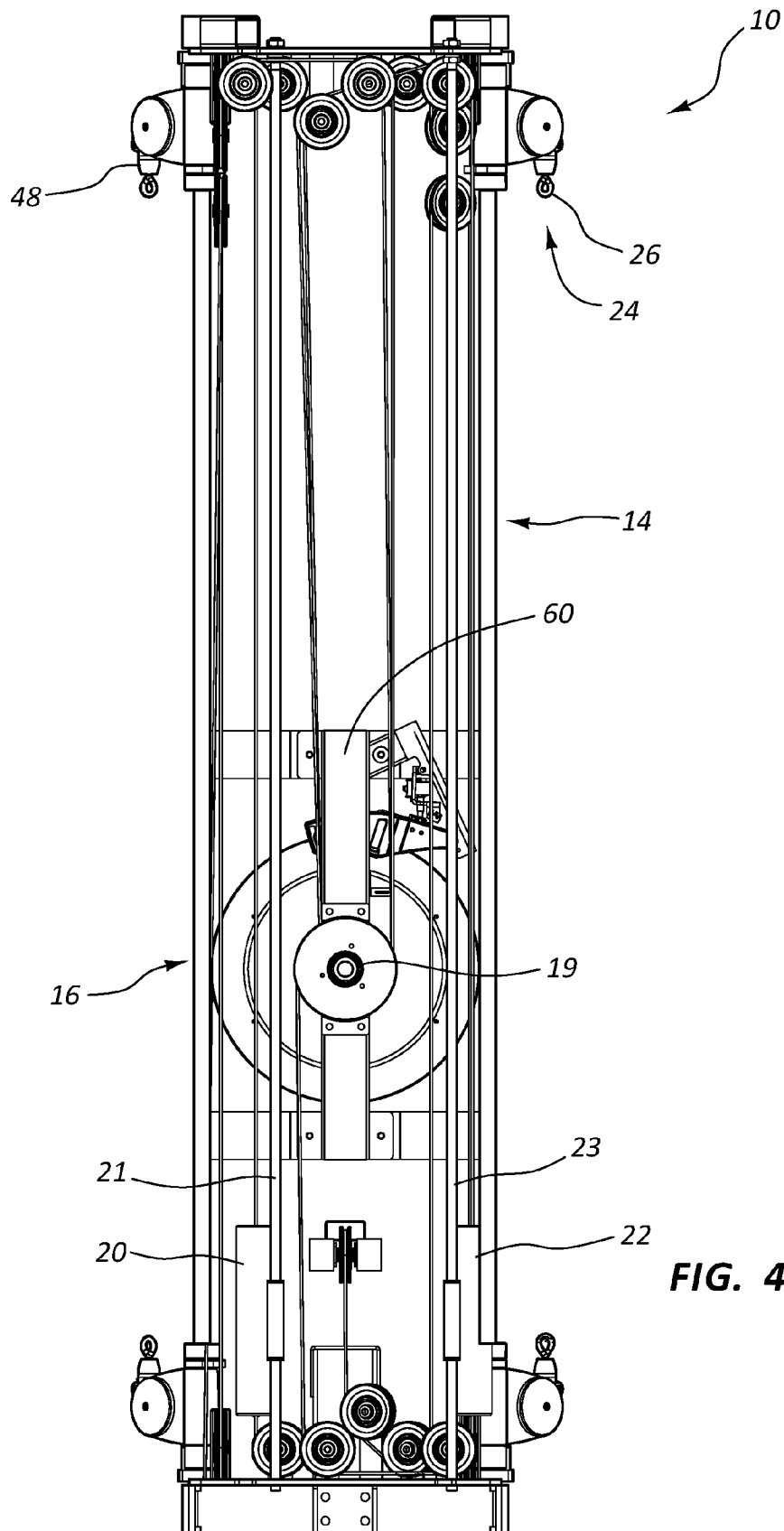


FIG. 4

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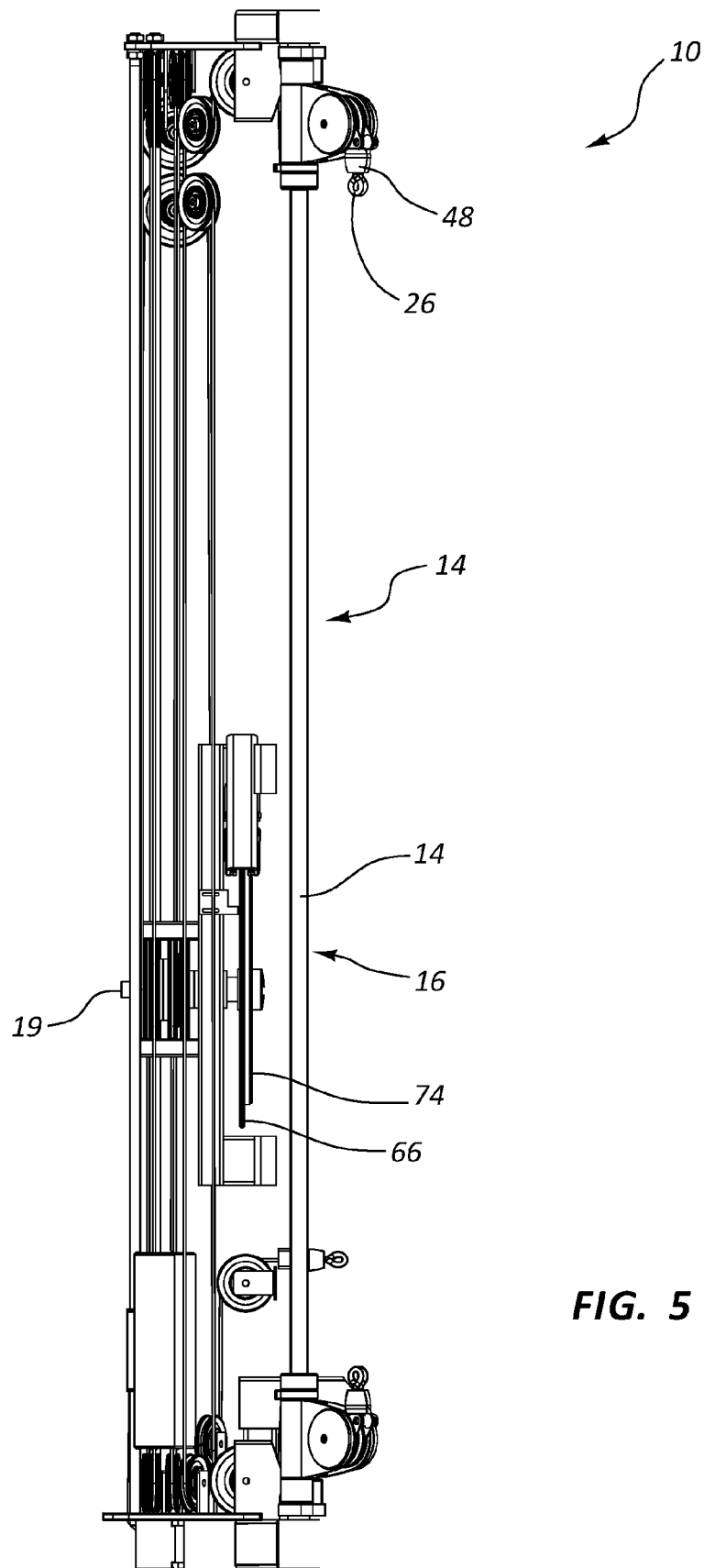


FIG. 5

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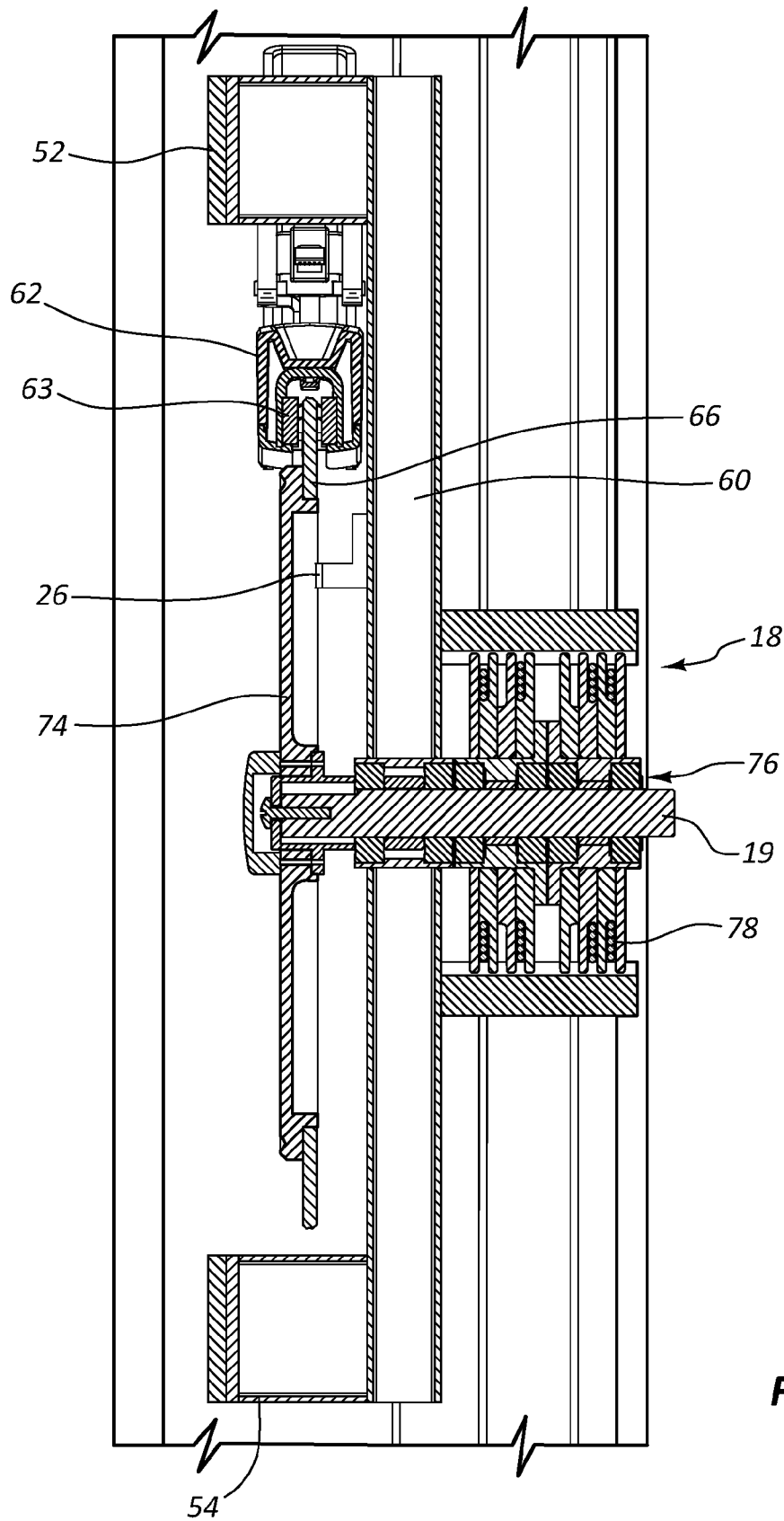


FIG. 6

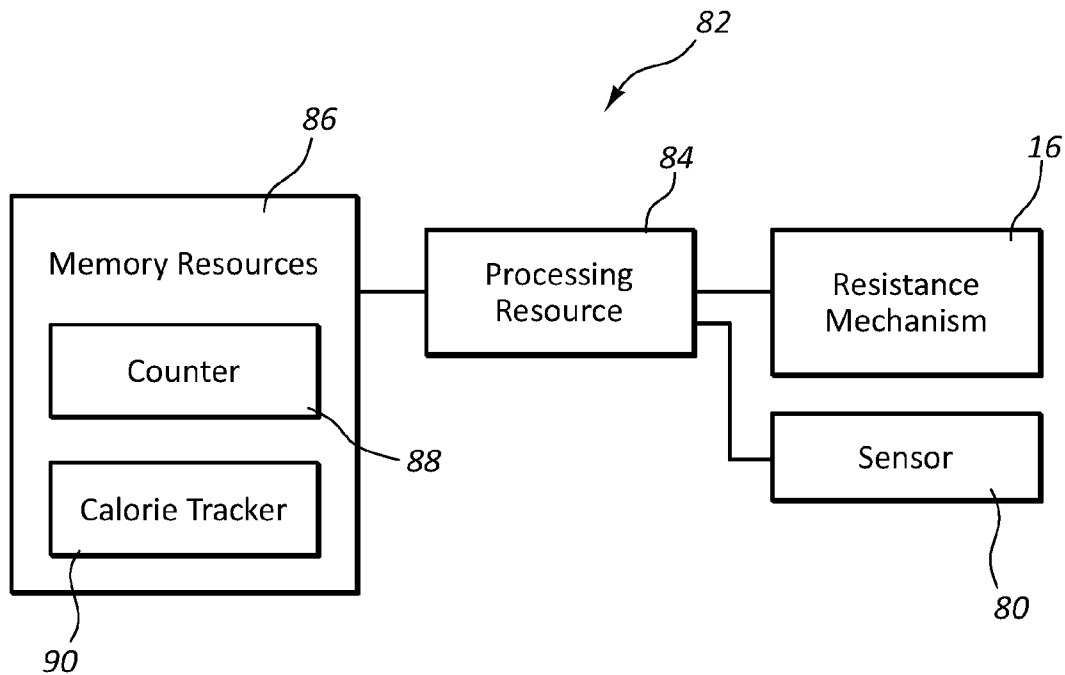


FIG. 7

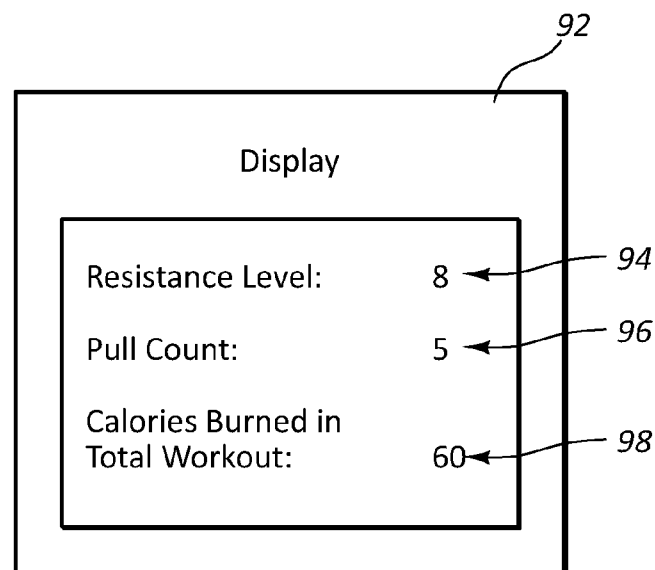


FIG. 8

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**MAGNETIC RESISTANCE MECHANISM IN A
CABLE MACHINE****RELATED APPLICATIONS**

This application claims priority to provisional Patent Application No. 61/920,834 titled "Magnetic Resistance Mechanism in a Cable Machine" filed Dec. 26, 2013. This application is herein incorporated by reference for all that it discloses.

BACKGROUND

While there are numerous exercise activities that one may participate in, exercise may be broadly classified into categories of aerobic exercise and anaerobic exercise. Aerobic exercise generally refers to activities that substantially increase the heart rate and respiration of the exerciser for an extended period of time. This type of exercise is generally directed to enhancing cardiovascular performance. Such exercise usually includes low or moderate resistance to the movement of the individual. For example, aerobic exercise includes activities such as walking, running, jogging, swimming, or bicycling for extended distances and extended periods of time.

Anaerobic exercise generally refers to exercise that strengthens skeletal muscles and usually involves the flexing or contraction of targeted muscles through significant exertion during a relatively short period of time and/or through a relatively small number of repetitions. For example, anaerobic exercise includes activities such as weight training, push-ups, sit-ups, pull-ups, or a series of short sprints.

To build skeletal muscle, a muscle group is contracted against resistance. The contraction of some muscle groups produces a pushing motion, while the contraction of other muscle groups produces a pulling motion. A cable machine is a popular piece of exercise equipment for building those muscle groups that produce pulling motions. A cable machine often includes a cable with a handle connected to a first end and a resistance mechanism connected to a second end. Generally, the resistance mechanism is connected to a selectable set of weights. A midsection of the cable is supported with at least one pulley. To move the cable, a user pulls on the handle with a force sufficient to overcome the force of the resistance mechanism. As the cable moves, the pulley or pulleys direct the movement of the cable and carry a portion of the resistance mechanism's load.

One type of cable exercise machine is disclosed in WIPO Patent Publication No. WO/2007/015096 issued to Andrew Loach. In this reference, an exercise apparatus allows the user to perform a variety of aerobic and strength training exercises. A user input means allows the user to apply torque to an input shaft of a resistance unit. A control means adjusts the resistance provided by a resistance means coupled to the input shaft according to the output of a number of sensors. In a preferred embodiment, the resistance unit is able to simulate at the input shaft the dynamic response of a damped flywheel or the dynamic response of an object driven through a viscous medium, or to maintain the resistance at a constant level that is set by the user. The resistance unit includes a battery or an electric generator device and can be operated without connection to an external power source. Other types of cable exercise machines are described in U.S. Patent Publication Nos. 2012/0065034 issued to Andrew Loach and 2006/0148622 issued to Ping Chen. All of these references are herein incorporated by reference for all that they disclose.

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SUMMARY

In one aspect of the invention, a cable exercise machine includes a first pull cable and a second pull cable incorporated into a frame.

In one aspect of the invention, the cable exercise machine may further include that each of the first pull cable and the second pull cable are linked to at least one resistance mechanism.

In one aspect of the invention, the at least one resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel.

In one aspect of the invention, the cable exercise machine may further include a sensor arranged to collect information about a position of the flywheel.

In one aspect of the invention, the cable exercise machine may further include a counter in communication with the sensor and arranged to track a number of rotations of the flywheel.

In one aspect of the invention, the counter is arranged to provide the number as input to an energy tracker.

In one aspect of the invention, the energy tracker is arranged to receive as input a level of magnetic resistance exerted on the flywheel with the magnetic unit.

In one aspect of the invention, the frame is a tower.

In one aspect of the invention, the cable exercise machine may further include that a third pull cable and a fourth pull cable are also incorporated into the tower.

In one aspect of the invention, the cable exercise machine may further include that a first handle end of the first pull cable is routed to an upper right location of the tower.

In one aspect of the invention, the cable exercise machine may further include that a second handle end of the second pull cable is routed to an upper left location of the tower.

In one aspect of the invention, the cable exercise machine may further include that a third handle end of the third pull cable is routed to a lower right location of the tower.

In one aspect of the invention, the cable exercise machine may further include that a fourth handle end of the fourth pull cable is routed to a lower left location of the tower.

In one aspect of the invention, the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location.

In one aspect of the invention, the cable exercise machine may further include at least two of the first pull cable, the second pull cable, the third pull cable and the fourth pull cable are connected to the same resistance mechanism.

In one aspect of the invention, the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

In one aspect of the invention, the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable.

In one aspect of the invention, the flywheel is arranged to rotate in just a single direction while at least one of the multiple spools are arranged to rotate in the single direction and an opposite direction.

In one aspect of the invention, the spools are linked to at least one counterweight.

In one aspect of the invention, an cable exercise machine may include a first pull cable, a second pull cable, a third pull cable, and a fourth pull cable incorporated into a tower.

In one aspect of the invention, the cable exercise machine may further include that a first handle end of the first pull cable is routed to an upper right location of the tower, a second handle end of the second pull cable is routed to an upper left location of the tower, a third handle end of the third pull cable

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is routed to a lower right location of the tower, and a fourth handle end of the fourth pull cable is routed to a lower left location of the tower.

In one aspect of the invention, each of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable are connected to a resistance mechanism.

In one aspect of the invention, the resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel.

In one aspect of the invention, the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location.

In one aspect of the invention, the cable exercise machine may further include a sensor arranged to collect information about a position of the flywheel.

In one aspect of the invention, the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

In one aspect of the invention, the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, the third pull cable, and the forth pull cable.

In one aspect of the invention, the flywheel is arranged to rotate in only a single direction while at least one of the multiple spools is arranged to rotate in the single direction and an opposite direction.

In one aspect of the invention, the spools are linked to at least one counterweight.

In one aspect of the invention, the cable exercise machine may further include a counter in communication with the sensor and arranged to track a number of rotations of the flywheel.

In one aspect of the invention, the counter is arranged to provide the number as input to an energy tracker.

In one aspect of the invention, a cable exercise machine may include a first pull cable, a second pull cable, a third pull cable, and a fourth pull cable incorporated into a tower.

In one aspect of the invention, the cable exercise machine may further include that a first handle end of the first pull cable is routed to an upper right location of the tower, a second handle end of the second pull cable is routed to an upper left location of the tower, a third handle end of the third pull cable is routed to a lower right location of the tower, and a fourth handle end of the fourth pull cable is routed to a lower left location of the tower.

In one aspect of the invention, each of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable are connected to a resistance mechanism.

In one aspect of the invention, the resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel.

In one aspect of the invention, the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location.

In one aspect of the invention, the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

In one aspect of the invention, the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, the third pull cable, and the forth pull cable.

In one aspect of the invention, the flywheel is arranged to rotate in only a single direction while at least one of the multiple spools is arranged to rotate in the single direction and an opposite direction.

In one aspect of the invention, the spools are linked to at least one counterweight.

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In one aspect of the invention, the cable exercise machine may further include a sensor is arranged to collect information about a position of the flywheel.

In one aspect of the invention, the cable exercise machine may further include a counter is in communication with the sensor and arranged to track a number of rotations of the flywheel.

In one aspect of the invention, the counter is arranged to provide the number as input to an energy tracker.

In one aspect of the invention, the energy tracker is arranged to receive as input a level of magnetic resistance exerted on the flywheel with the magnetic unit.

Any of the aspects of the invention detailed above may be combined with any other aspect of the invention detailed herein.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate various embodiments of the present apparatus and are a part of the specification. The illustrated embodiments are merely examples of the present apparatus and do not limit the scope thereof.

FIG. 1 illustrates a front perspective view of an example of a cable exercise machine in accordance with the present disclosure.

FIG. 2 illustrates a front perspective view of the cable exercise machine of FIG. 1 with an outside cover removed.

FIG. 3 illustrates a front view of the cable exercise machine of FIG. 1 with an outside cover removed.

FIG. 4 illustrates a back view of the cable exercise machine of FIG. 1 with an outside cover removed.

FIG. 5 illustrates a side view of the cable exercise machine of FIG. 1 with an outside cover removed.

FIG. 6 illustrates a cross sectional view of a resistance mechanism of the cable exercise machine of FIG. 1.

FIG. 7 illustrates a perspective view of an example of a tracking system of a cable exercise machine in accordance with the present disclosure.

FIG. 8 illustrates a block diagram of an example of a display of a cable exercise machine in accordance with the present disclosure.

Throughout the drawings, identical reference numbers designate similar, but not necessarily identical, elements.

DETAILED DESCRIPTION

Those who exercise often desire to know the amount of calories that they burn during their workouts. This information allows them to track their progress and achieve health related goals. Calories are burned during anaerobic exercises, such as those types of exercises that are performed on a cable exercise machine. The amount of calories that are burned using a cable exercise machine depends on the number of repetitions that the cable is pulled, the distance that the cable is moved during each pull, and the amount of resistance associated with each pull.

Generally, cable exercise machines provide resistance to the movement of the cable with a set of weighted plates. Often, these weighted plates are arranged in a stack with an ability to selectively connect a subset of the weighted plates to an attachment of the cable. This can be done by inserting a removable pin within a plate slot of at least one of the weighted plates such that the pin is also inserted into an attachment slot of the cable. With this arrangement, when the user pulls the cable, the weighted plate will move with the cable. Also, any plates stacked over the moving plate will move with the cable as well. However, this type of cable

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exercise machine does not include a mechanism that assists the user in tracking the amount of calories burned during the workout.

The principles described in the present disclosure include a cable exercise machine that incorporates a sensor that tracks the position of a flywheel. The flywheel is incorporated into a magnetic resistance mechanism that applies a load of resistance to the movement of the pull cable. As the flywheel rotates, the sensor tracks the rotation of the flywheel. In some embodiments, the sensor causes a counter to be incremented up one for each rotation of the flywheel. In other embodiments, the sensor can track partial revolutions of the flywheel.

The level of resistance applied by the magnetic resistance mechanism can be controlled electronically. For example, an electrical input into an electromagnetic unit can produce an output of resistance that can resist the movement of the cable. In other examples, an adjustable distance between a magnetic unit and the flywheel can also change the amount of resistance that is applied to the movement of the cable. The inputs or outputs of these and other types of adjustable resistance mechanisms can be tracked and stored.

The tracked level of resistance can be sent to an energy tracker. Also, the sensor that tracks the position of the flywheel can also send position information to the energy tracker as an input. The energy tracker can determine the amount of calories (or other energy units) burned during each pull and/or collectively during the course of the entire workout based on the inputs about the flywheel position and the resistance level.

The principles described herein also include a unique example of a flywheel arrangement where a single flywheel is arranged to resist the movement of four different resistance cables. In some examples, the flywheel is attached to a central shaft with multiple spools coaxially mounted around the central shaft. The spools can contain attachments to at least one of the cables. As one of the pull cables is moved in a first direction, the spools are rotated in a first direction. The torque generated by rotating the spools is transferred to the flywheel, and the flywheel will rotate in the first direction with the spools. However, when the pull cable is returned, the force that caused the spools to rotate in the first direction ceases. At least one counterweight is connected to the flywheel through a counterweight cable. In the absence of the force imposed on the pull cable, the counterweights cause the spools to rotate back in the opposite direction to their original orientation before the pull cable force was imposed. However, the arrangement between the flywheel, shaft, and spools does not transfer the torque generated in the second direction to the flywheel. As a result, the orientation of the flywheel does not change as the counterweights pull the spools back. As the spools return to their original orientation in the opposite direction, the pull cables are rewound around the spools, which returns the handles connected to the pull cable back to their original locations as well.

Thus, in this example, the flywheel rotates in a single direction regardless of the direction that the pull cable is moving. Further, in this example, the flywheel is just rotating when a pull force is exerted by the user. Thus, the position of the flywheel represents just work done as part of the workout. In other words, the return movement of the cable does not affect the calorie count. Further, the calorie counting calculations of the cable exercise machine are simplified because the sensor is insulated from at least the return forces that may skew the calorie counting calculations. Consequently, the tracked calories represent just those calories that are consumed during the course of the workout.

With reference to this specification, terms such as “upper,” “lower,” and similar terms that are used with reference to

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components of the cable exercise machine are intended to described relative relationships between the components being described. Such terms generally depict the relationship between such components when the cable exercise machine is standing in the intended upright position for proper use. For example, the term “lower” may refer to those components of the cable exercise machine that are located relatively closer to the base of the cable exercise machine than another component when the cable exercise machine is in the upright position. Likewise, the term “upper” may refer to those components of the cable exercise machine that are located relatively farther away from the base of the cable exercise machine when in the upright position. Such components that are described with “upper,” “lower,” or similar terms do not lose their relative relationships just because the cable exercise machine is temporarily on one of its sides for shipping, storage, or during manufacturing.

Particularly, with reference to the figures, FIGS. 1-5 depict a cable exercise machine 10. FIG. 1 depicts the cable exercise machine 10 with an outer covering 12 about a tower 14 that supports the cables while FIGS. 2-5 depict different views of the cable exercise machine 10 without the outer covering 12. In the example of FIGS. 1-5, a resistance mechanism, such as a flywheel assembly 16, is positioned in the middle of the tower 14. The flywheel assembly 16 includes a flywheel 17, a spool subassembly 18, and a central shaft 19.

The flywheel assembly 16 is connected to multiple cables through a spool subassembly 18. The cables are routed through multiple locations within the tower 14 with an arrangement of pulleys that direct the movement of the cables, a first counterweight 20, a second counterweight 22, and the flywheel assembly 16. The first and second counterweights 20, 22 are attached to a first counterweight guide 21 and a second counterweight guide 23 respectively. These guides 21, 23 guide the movement of the counterweights 20, 22 as they move with the rotation of the spool subassembly 18.

At least some of the cables have a handle end 24 that is equipped with a handle connector 26 that is configured to secure a handle 28 for use in pulling the cables. The pulleys route the handle ends 24 of a first cable 30 to an upper right location 32 of the tower 14, a second cable 34 to an upper left location 36 of the tower 14, a third cable 38 to a lower right location 40 of the tower 14, and a fourth cable 42 to a lower left location 44 of the tower 14. Each of these cables 30, 34, 38, 42 may be pulled to rotate the flywheel 17.

The handle connectors 26 may be any appropriate type of connector for connecting a handle 28 to a cable. In some examples, at least one of the handle connectors 26 includes a loop to which a handle 28 can be connected. Such a loop may be made of a metal, rope, strap, another type of material, or combinations thereof. In some examples, the loop is spring loaded. In yet other examples, a loop is formed out of the cable material which serves as the handle 28. The handle 28 may be a replaceable handle so that the user can change the type of grip or move the handle 28 to a different handle connectors 26.

The user can pull any combination of the cables 30, 34, 38, 42 as desired. For example, the user may use the first and second cables 30, 34 as a pair for exercises that involve muscle groups that produce downward motions. In other examples, the user may use the third and fourth cables 38, 42 as a pair for exercises that involve muscle groups that produce upwards motions. Further, the user may use the first and third cables 30, 38 as a pair. Likewise, the user may use the second and fourth cables 34, 42 as a pair. In general, the user may combine any two of the cables to use as a pair to execute a

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workout as desired. Also, the user may use just a single cable as desired to execute a workout.

In some embodiments, a stopper **48** is attached to the handle ends **24** of the cables **30, 34, 38, 42**. The stopper **48** can include a large enough cross sectional thickness to stop the handle end **24** from being pulled into a pulley, an opening in the outer covering, or another feature of the cable exercise machine **10** that directs the movement of the cables.

Additionally, the precise location to where the cables **30, 34, 38, 42** are routed may be adjusted. For example, a guide bar **50** may be positioned on the cable exercise machine **10** that allows a pulley supporting the handle end **24** to move along the guide bar's length. Such adjustments may be made to customize the workout for the individual user's height and/or desired target muscle group.

Within the tower **14**, the pull cables **30, 34, 38, 42** may be routed in any appropriate manner such that a pull force on one of the pull cables **30, 34, 38, 42** causes the rotation of the flywheel **17**. For example, each of the pull cables **30, 34, 38, 42** may have an end attached directly to the spool subassembly **18**. In other examples, each of the pull cables **30, 34, 38, 42** may have an end attached directly to an intermediate component that attaches to the spool subassembly **18**. The movement of the pull cables **30, 34, 38, 42** in a first pulling direction may cause the spool subassembly **18** to rotate in a first direction about the central shaft **19**. Further, counterweights **20, 22** may be in communication with the spool subassembly **18** and arranged to rotate the spool subassembly **18** in a second returning direction. Further, the pull cables **30, 34, 38, 42** may be routed with a single pulley or with multiple pulleys. In some examples, multiple pulleys are used to distribute the load to more than one location on the tower to provide support for the forces generated by a user pulling the pull cables **30, 34, 38, 42** against a high resistance. Further, at least one of the pulleys incorporated within the tower may be a tensioner pulley that is intended to reduce the slack in the cables so that the resistance felt by the user is consistent throughout the pull.

A first cross bar **52** and a second cross bar **54** may collectively span from a first side **56** to a second side **58** of the tower **14**. The cross bars **52, 54** collectively support an assembly member **60** that is oriented in a transverse orientation to the cross bars **52, 54**. The central shaft **19** is inserted into an opening of the assembly member **60** and supports the flywheel assembly **16**.

The flywheel assembly **16** includes an arm **62** that is pivotally coupled to a fixture **64** connected to the first cross bar **52**. The arm **62** contains at least one magnetic unit **63** arranged to provide a desired magnetic flux. As the arm **62** is rotated to or away from the proximity of the flywheel **17**, the magnetic flux through which the flywheel **17** rotates changes, thereby altering the amount of rotational resistance experienced by the flywheel **17**.

The flywheel **17** may be constructed of multiple parts. For example, the flywheel **17** may include a magnetically conductive rim **66**. In other embodiments, the flywheel **120** includes another type of magnetically conductive component that interacts with the magnetic flux imparted by the arm **62**. As the magnetic flux increases, more energy is required to rotate the flywheel **17**. Thus, a user must impart a greater amount of energy as he or she pulls on the pull cable to rotate the flywheel **17**. As a result of the increased resistance, the user will consume more calories. Likewise, as the magnetic flux decreases, less energy is required to rotate the flywheel **17**. Thus, a user can impart a lower amount of energy as he or she pulls on the pull cable to rotate the flywheel **17**.

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While this example has been described with specific reference to an arm **62** producing a magnetic flux that pivots to and away from the flywheel **17** to achieve a desired amount of resistance to rotation of the flywheel **17**, any appropriate mechanism for applying a resistance to the rotation of the flywheel **17** may be used in accordance with the principles described herein. For example, the arm **62** may remain at a fixed distance from the flywheel **17**. In such an example, the magnetic flux may be altered by providing a greater electrical input to achieve a greater magnetic output. Further, in lieu of pivoting the arm **62** to and away from the flywheel **17**, a magnetic unit **63** may be moved towards or away from the flywheel **17** with a linear actuator or another type of actuator.

The cable exercise machine **10** may further include a control panel **68** which may be incorporated into the outer covering **12** or some other convenient location. The control panel **68** may include various input devices (e.g., buttons, switches, dials, etc.) and output devices (e.g., LED lights, displays, alarms, etc.). The control panel **68** may further include connections for communication with other devices. Such input devices may be used to instruct the flywheel assembly to change a level of magnetic resistance, track calories, set a timer, play music, play an audiovisual program, provide other forms of entertainment, execute a pre-programmed workout, perform another type of task, or combinations thereof. A display can indicate the feedback to the user about his or her performance, the resistance level at which the resistance mechanism is set, the number of calories consumed during the workout, other types of information, or combinations thereof.

FIG. 6 illustrates a cross sectional view of a resistance mechanism of the cable exercise machine of FIG. 1. In this example, the central shaft **19** is rigidly connected to a body **74** of the flywheel **17**. A bearing subassembly **76** is disposed around the central shaft **19** and is positioned to transfer a rotational load imparted in a first direction to the flywheel **17**. Concentric to the central shaft **19** and the bearing subassembly **76** is the spool subassembly **18** which is connected to at least one of the pull cables **30, 34, 38, 42**.

In a retracted position, a portion of a pull cable connected to the spool subassembly **18** is wound in slots **78** formed in the spool subassembly **18**. As the pull cable is pulled by the user during a workout, the pull cable exerts a force tangential in the first direction to the spool subassembly **18** and rotates the spool subassembly **18** in the first direction as the pull cable unwinds. In some examples, a counterweight cable that is also connected to the spool subassembly **18** winds up in the slots **78** of the spool subassembly **18**. This motion shortens the available amount of the counterweight cable and causes at least one of the counterweights **20, 22** to be raised to a higher elevation. When the force on the pull cable ceases, the gravity on the counterweight pulls the counterweight back to its original position, which imposes another tangential force in a second direction on the spool subassembly **18** causing it to unwind the counterweight cable in the second direction. The unwinding motion of the counterweight cable causes the pull cable to rewind back into the slots **78** of the spool subassembly **18**. This motion pulls the pull cable back into the tower **14** until the stoppers **48** attached to the handle ends **24** of the pull cables prevent the pull cables from moving.

As the spool subassembly **18** rotates in the first direction, the bearing subassembly **76** is positioned to transfer the rotational load from the spool subassembly **18** to the central shaft **19** which transfers the rotational load to the flywheel body **74**. As a result, the flywheel **17** rotates with the spool subassembly **18** in the first direction as the user pulls on the pull cables. However, as the spool subassembly **18** rotates in the second

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direction imposed by the counterweights **20**, **22** returning to their original positions, the bearing subassembly **76** is not positioned to transfer the rotational load from the spool subassembly **18** to the central shaft **19**. Thus, no rotational load is transferred to the flywheel body **74**. As a result, the flywheel **17** remains in its rotational orientation as the spool subassembly **18** rotates in the second direction. Consequently, the flywheel **17** moves in just the first direction.

While this example has been described with specific reference to the flywheel **17** rotating in just a single direction, in other examples the flywheel is arranged to rotate in multiple directions. Further, while this example has been described with reference to a specific arrangement of cables, pulleys, and counterweights, these components of the cable exercise machine **10** may be arranged in other configurations.

A sensor **80** can be arranged to track the rotational position of the flywheel **17**. As the flywheel **17** rotates from the movement of the pull cables, the sensor **80** can track the revolutions that the flywheel rotates. In some examples, the sensor **80** may track half revolutions, quarter revolutions, other fractional revolutions, or combinations thereof.

The sensor **80** may be any appropriate type of sensor that can determine the rotational position of the flywheel **17**. Further, the sensor **80** may be configured to determine the flywheel's position based on features incorporated into the flywheel body **74**, the magnetically conductive rim **66**, or the central shaft **19** of the flywheel **17**. For example, the sensor **80** may be a mechanical rotary sensor, an optical rotary sensor, a magnetic rotary sensor, a capacitive rotary sensor, a geared multi-turn sensor, an incremental rotary sensor, another type of sensor, or combinations thereof. In some examples, a visual code may be depicted on the flywheel body **74**, and the sensor **80** may read the position of the visual code to determine the number of revolutions or partial revolutions. In other examples, the flywheel body **74** includes at least one feature that is counted as the features rotate with the flywheel body **74**. In some examples, a feature is a magnetic feature, a recess, a protrusion, an optical feature, another type of feature, or combinations thereof.

The sensor **80** can feed the number of revolutions and/or partial revolutions to a processor as an input. The processor can also receive as an input the level of resistance that was applied to the flywheel **17** when the revolutions occurred. As a result, the processor can cause the amount of energy or number of calories consumed to be determined. In some examples, other information, other than just the calorie count, is determined using the revolution count. For example, the processor may also determine the expected remaining life of the cable exercise machine **10** based on use. Such a number may be based, at least in part, on the number of flywheel revolutions. Further, the processor may also use the revolution count to track when maintenance should occur on the machine, and send a message to the user or another person indicating that maintenance should be performed on the machine based on usage.

In some examples, the sensor **80** is accompanied with an accelerometer. The combination of the inputs from the accelerometer and the sensor can at least aid the processor in determining the force exerted by the user during each pull. The processor may also track the force per pull, the average force over the course of the workout, the trends of force over the course of the workout, and so forth. For example, the processor may cause a graph of force per pull to be displayed to the user. In such a graph, the amount of force exerted by the user at the beginning of the workout verses the end of the workout may be depicted. Such information may be useful to the user and/or a trainer in customizing a workout for the user.

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The number of calories per pull may be presented to the user in a display of the cable exercise machine **10**. In some examples, the calories for an entire workout are tracked and presented to the user. In some examples, the calorie count is presented to the user through the display, through an audible mechanism, through a tactile mechanism, through another type of sensory mechanism, or combinations thereof.

FIG. 7 illustrates a perspective view of a tracking system **82** of a cable exercise machine **10** in accordance with the present disclosure. The tracking system **82** may include a combination of hardware and programmed instructions for executing the functions of the tracking system **82**. In this example, the tracking system **82** includes processing resources **84** that are in communication with memory resources **86**. Processing resources **84** include at least one processor and other resources used to process programmed instructions. The memory resources **86** represent generally any memory capable of storing data such as programmed instructions or data structures used by the tracking system **82**. The programmed instructions shown stored in the memory resources **86** include a counter **88** and an energy tracker **90**.

The memory resources **86** include a computer readable storage medium that contains computer readable program code to cause tasks to be executed by the processing resources **84**. The computer readable storage medium may be tangible and/or non-transitory storage medium. The computer readable storage medium may be any appropriate storage medium that is not a transmission storage medium. A non-exhaustive list of computer readable storage medium types includes non-volatile memory, volatile memory, random access memory, write only memory, flash memory, electrically erasable program read only memory, magnetic storage media, other types of memory, or combinations thereof.

The counter **88** represents programmed instructions that, when executed, cause the processing resources **84** to count the number of revolutions and/or partial revolutions made by the flywheel **17**. The energy tracker **90** represents programmed instructions that, when executed, cause the processing resources **84** to track the number of calories burned by the user during this workout. The energy tracker **90** takes inputs from at least the sensor **80** and the resistance mechanism to calculate the number of calories burned.

Further, the memory resources **86** may be part of an installation package. In response to installing the installation package, the programmed instructions of the memory resources **86** may be downloaded from the installation package's source, such as a portable medium, a server, a remote network location, another location, or combinations thereof. Portable memory media that are compatible with the principles described herein include DVDs, CDs, flash memory, portable disks, magnetic disks, optical disks, other forms of portable memory, or combinations thereof. In other examples, the program instructions are already installed. Here, the memory resources can include integrated memory such as a hard drive, a solid state hard drive, or the like.

In some examples, the processing resources **84** and the memory resources **86** are located within the same physical component, such as the cable exercise machine **10** or a remote component in connection with the cable exercise machine **10**. The memory resources **86** may be part of the cable exercise machine's main memory, caches, registers, non-volatile memory, or elsewhere in the physical component's memory hierarchy. Alternatively, the memory resources **86** may be in communication with the processing resources **84** over a network. Further, the data structures, such as the libraries, calories charts, histories, and so forth may be accessed from a remote location over a network connection while the pro-

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grammed instructions are located locally. Thus, information from the tracking system 82 may be accessible on a user device, on a server, on a collection of servers, or combinations thereof.

FIG. 8 illustrates a block diagram of a display 92 of a cable exercise machine 10 in accordance with the present disclosure. In this example, the display 92 includes a resistance level indicator 94, a pull count indicator 96, and a calorie indicator 98. The resistance level indicator 94 may be used to display the current resistance setting of the cable exercise machine 10.

The pull count indicator 96 may track the number of pulls that have been executed by the user. Such a number may track the time periods where the flywheel 17 is rotating, the number of periods when the flywheel 17 is not rotating, the time periods where the spool subassembly 18 is rotating in the first direction, the time periods where the spool subassembly 18 is rotating in the second direction, the movement of the counterweights 20, 22, another movement, or combinations thereof. In some examples, the cable exercise machine 10 has an ability to determine whether a pull is a partial pull or a full length pull. In such examples, the pull count indicator 96 may depict the total pulls and partial pulls.

The calorie indicator 98 may depict the current calculation of consumed calories in the workout. In some examples, the calorie count reflects just the input from the sensor 80. In other examples, the calorie count reflects the input from the flywheel assembly 16 and the sensor 80. In other examples, inputs from an accelerometer are into the flywheel assembly 16, a pedometer worn by the user, another exercise machine (i.e. a treadmill or elliptical with calories tracking capabilities), another device, or combinations thereof are also reflected in the calorie indicator 98.

While the above examples have been described with reference to a specific cable exercise machine with pulleys and cables for directing the rotation of the flywheel 17 and pull cables 30, 34, 38, 42, any appropriate type of cable pull machine may be used. For example, the cable exercise machine may use bearing surfaces or sprockets to guide the cables. In other examples, the cables may be partially made of chains, ropes, wires, metal cables, other types of cables, or combinations thereof. Further, the cables may be routed in different directions than depicted above.

INDUSTRIAL APPLICABILITY

In general, the invention disclosed herein may provide a user with the advantage of an intuitive energy tracking device incorporated into a cable exercise machine. The user can adjust his or her workout based on the number of calories consumed. Further, the user may use the calorie count to adjust his or her diet throughout the day. The cable exercise machine described above may also have the ability to track other information besides the calorie count, such as a force exerted per pull as well as track a maintenance schedule based on the flywheel's revolution count.

The level of resistance applied by the magnetic resistance mechanism of the present exemplary system can be finely controlled via electronic inputs. The inputs or outputs of these and other types of adjustable resistance mechanisms can be tracked and stored. The tracked level of resistance can then be sent to a calorie tracker. The calorie tracker can determine the amount of calories burned during each individual pull and/or a group of pulls collectively during the course of the entire workout based on the inputs about the flywheel position and

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the resistance level. This may provide a user with an accurate representation of the work performed on the cable exercise machine.

The present system may also provide a precise calculation of work performed during the workout, while providing the user the flexibility of using multiple resistance cables. The unique flywheel arrangement allows for the use of a single flywheel to resist the movement of multiple different resistance cables. According to the present configuration, the flywheel rotates in a single direction regardless of the direction that the pull cable is moving. Further, in this example, the flywheel is just rotating when a pull force is exerted by the user, thus the position of the flywheel represents just the work done as part of the workout. Further, the calorie counting calculations of the cable exercise machine are simplified because the sensor is insulated from at least the pull cable's return forces that may skew the calorie counting calculations. Consequently, the tracked calories can represent just those calories that are consumed during the course of the workout.

Additionally, the present exemplary system also determines the angular position of the flywheel during operation. Measuring the angular position of the flywheel provides advantages over merely measuring forces applied directly to the flywheel, such as torque or magnetic resistance. For example, angular position changes may be implemented in the calculation process. Further, the angular displacement of the flywheel may reflect the total interaction between all of the components of the flywheel assembly, which can provide a more accurate understanding of when the cable exercise machine ought to be flagged for routine service.

Such a cable exercise machine may include a tower that has the ability to position the ends of the pull cables at a location above the user's head. Further, the user has an ability to adjust the position of the cable ends along a height of the cable exercise machine so that the user can refine the muscle groups of interest. In the examples of the exercise machine disclosed above, the user has four pull cables to which the user can attach a handle. Thus, the user can work muscle groups that involve pulling a low positioned cable with a first hand while pulling a relatively higher positioned cable with a second hand. The pull cable ends can be adjusted to multiple positions when the magnetic flywheel is positioned in the middle of the cable exercise machine. This central location allows for the pull cables to be attached to the spool subassembly from a variety of angles.

What is claimed is:

1. A cable exercise machine, comprising:

a first pull cable and a second pull cable incorporated into a frame;

each of the first pull cable and the second pull cable being linked to at least one resistance mechanism; and the at least one resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel;

wherein the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

2. The cable exercise machine of claim 1, further comprising a sensor arranged to collect information about a position of the flywheel.

3. The cable exercise machine of claim 2, further comprising a counter in communication with the sensor and arranged to track a number of rotations of the flywheel.

4. The cable exercise machine of claim 3, wherein the counter is arranged to provide the number as input to an energy tracker.

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5. The cable exercise machine of claim 4, wherein the energy tracker is arranged to receive as input a level of magnetic resistance exerted on the flywheel with the magnetic unit.

6. The cable exercise machine of claim 1, wherein the frame is a tower.

7. The cable exercise machine of claim 6, wherein a third pull cable and a fourth pull cable are also incorporated into the tower.

8. The cable exercise machine of claim 7, wherein a first handle end of the first pull cable is routed to an upper right location of the tower; a second handle end of the second pull cable is routed to in an upper left location of the tower; a third handle end of the third pull cable is routed to a lower right location of the tower; and a fourth handle end of the fourth pull cable is routed to a lower left location of the tower.

9. The cable exercise machine of claim 8, wherein the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location.

10. The cable exercise machine of claim 8, wherein at least two of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable are connected to the same resistance mechanism.

11. The cable exercise machine of claim 1, wherein the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, a third pull cable, and a fourth pull cable.

12. The cable exercise machine of claim 1, wherein the flywheel is arranged to rotate in just a single direction while at least one of the multiple spools are arranged to rotate in the single direction and an opposite direction.

13. The cable exercise machine of claim 12, wherein the multiple spools are linked to at least one counterweight.

14. A cable exercise machine, comprising:

a first pull cable, a second pull cable, a third pull cable, and a fourth pull cable incorporated into a tower;

a first handle end of the first pull cable is routed to an upper right location of the tower; a second handle end of the second pull cable is routed to an upper left location of the tower; a third handle end of the third pull cable is routed to a lower right location of the tower; and a fourth handle end of the fourth pull cable is routed to a lower left location of the tower;

each of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable being connected to a resistance mechanism;

the resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel; the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location; and

a sensor arranged to collect information about a position of the flywheel.

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15. The cable exercise machine of claim 14, wherein the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

16. The cable exercise machine of claim 15, wherein the flywheel is arranged to rotate in only a single direction while at least one of the multiple cable spools is arranged to rotate in the single direction and an opposite direction.

17. The cable exercise machine of claim 14, further comprising a counter in communication with the sensor and arranged to track a number of rotations of the flywheel.

18. The cable exercise machine of claim 17, wherein the counter is arranged to provide the number as input to an energy tracker.

19. A cable exercise machine, comprising:

a first pull cable, a second pull cable, a third pull cable, and a fourth pull cable incorporated into a tower;

a first handle end of the first pull cable is routed to an upper tight location of the tower; a second handle end of the second pull cable is routed to an upper left location of the tower; a third handle end of the third pull cable is routed to a lower right location of the tower; and a fourth handle end of the fourth pull cable is routed to a lower left location of the tower;

each of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable being connected to a resistance mechanism;

the resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel; the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location;

the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools;

the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable;

the flywheel is arranged to rotate in only a single direction while at least one of the multiple spools is arranged to rotate in the single direction and an opposite direction; the multiple spools are linked to at least one counterweight; a sensor is arranged to collect information about a position of the flywheel;

a counter is in communication with the sensor and arranged to track a number of rotations of the flywheel;

the counter being arranged to provide the number as input to an energy tracker; and

the energy tracker is arranged to receive as input a level of magnetic resistance exerted on the flywheel with the magnetic unit.

* * * * *

EXHIBIT 3

Trials@uspto.gov
571-272-7822

Paper 51
Entered: December 3, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NAUTILUS, INC.,
Petitioner,

v.

ICON HEALTH & FITNESS INC.,
Patent Owner.

Case IPR2017-01408
Patent 9,616,276 B2

Before GEORGE R. HOSKINS, TIMOTHY J. GOODSON, and
JAMES A. WORTH, *Administrative Patent Judges*.

WORTH, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

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I. INTRODUCTION

On May 12, 2017, Nautilus, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–20 (“the challenged claims”) of U.S. Patent No. 9,616,276 B2 (Ex. 1001, “the ’276 patent”) on the following grounds:

References	Basis	Claims Challenged
Wu ¹ and Jones ²	§ 103(a)	1–4, 10
Wu and Webb ³	§ 103(a)	5, 6
Wu, Watson ⁴ , and Jones	§ 103(a)	7–9, 11–20
Zhou ⁵ and Jones	§ 103(a)	1–4, 10
Zhou and Webb	§ 103(a)	5, 6
Zhou, Loach ⁶ , and Jones	§ 103(a)	7–9, 11–20

On September 5, 2017, ICON Health & Fitness Inc. (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”).

¹ U.S. Patent Application Publication No. 2003/0171192 A1, pub. Sept. 11, 2003 (Ex. 1002).

² U.S. Patent No. 4,798,378, iss. Jan. 17, 1989 (Ex. 1005).

³ U.S. Patent Application Publication No. 2003/0017918 A1, pub. Jan. 23, 2003 (Ex. 1003).

⁴ U.S. Patent Application Publication No. 2006/0234840 A1, pub. Oct. 19, 2006 (Ex. 1004).

⁵ U.S. Patent No. 8,517,899 B2, iss. Aug. 27, 2013 (Ex. 1006).

⁶ W.O. Patent Application Publication No. 2007/015096 A2, pub. Feb. 8, 2007 (Ex. 1007).

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On December 4, 2017, the Board instituted an *inter partes* review. Paper 7 (“Dec.”). We initially instituted review for a subset of the asserted claims and asserted grounds. *See* Dec. 32. Specifically, we determined based on the preliminary record that Petitioner had demonstrated a reasonable likelihood of prevailing in its challenge to claims 1–4 and 10 as obvious over Wu and Jones; claims 5 and 6 as obvious over Wu and Webb; claims 7, 9, and 11–20 as obvious over Wu, Watson, and Jones; claim 8 as obvious over Wu, Watson, Jones, and Street⁷; claims 1–4 and 10 as obvious over Zhou and Jones; and claims 5 and 6 as obvious over Zhou and Webb. Dec. 32.

Also on December 4, 2017, we issued a Scheduling Order for the proceeding. Paper 8.

Subsequently on April 27, 2018, pursuant to the holding in *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1355–57 (2018), we issued an Order (Paper 19) modifying our institution decision to institute on all of the challenged claims and all of the grounds presented in the Petition.

After institution of trial, Patent Owner did not file a Patent Owner Response to the Petition. Petitioner did not seek to address further any of the claims or grounds from the Petition added to the proceeding pursuant to SAS.

However, during the proceeding, Patent Owner filed a Motion to Amend (Paper 17, “Mot. Amend”) on March 5, 2018. On May 7, 2018, we issued an Order (Paper 20) authorizing a 10-page extension of the page limit for Petitioner’s opposition to the Motion to Amend and deferred action on a

⁷ U.S. Patent No. 4,625,962, iss. Dec. 2, 1986 (Ex. 1008, Appendix V, “Street”).

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request by Petitioner for authorization for surreplies. On June 4, 2018, Petitioner filed an Opposition to Patent Owner's Motion to Amend (Paper 21, "Opposition" or "Opp."). Patent Owner obtained authorization from the Board, by email, for a corresponding 10-page extension for Patent Owner's reply thereto. On July 5, 2018, Patent Owner filed a Reply to Petitioner's Opposition to Patent Owner's Motions to Amend (Paper 28, "Motion Reply").⁸

On July 12, 2018, after conferring with the Board, the parties filed a joint stipulation for amending the scheduling order to provide for further briefing by Petitioner. Paper 32. On July 20, 2018, we issued an Order (Paper 35) authorizing Petitioner to file a limited Motion Surreply with the deposition transcript of Dr. Ganaja according to the stipulation of the parties. On August 1, 2018, Petitioner filed a Motion Surreply (Paper 36)⁹ and the deposition transcript of Dr. Ganaja (Ex. 1020).

After a further conference call with the parties on August 3, 2018 held at the request of Patent Owner, we issued an Order (Paper 38) on August 7, 2018, striking portions of the Motion Surreply as contrary to the stipulation of the parties. Paper 38, 3–4. Also pursuant to the Order, Patent Owner filed a list of purportedly improper arguments in the Motion Surreply on August 8, 2018. Paper 39.

⁸ Patent Owner filed a separate Motion to Amend in each of Cases IPR2017-01407 and -1408, in each case proposing substitute claims numbered 21 and 22. Petitioner filed the same Opposition and Patent Owner filed the same Motion Reply in each of IPR2017-01407 and -4108. We have written separate opinions in order to avoid confusion, e.g., because the proposed substitute claims in IPR2017-01407 and -1408 have overlapping numbering.

⁹ Petitioner's Motion Surreply applies to both IPR2017-01407 and -1408.

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On August 10, 2018, Patent Owner filed a Motion to Exclude Evidence (Paper 42, “Mot. Excl.”). On August 21, 2018, Petitioner filed an Opposition to Patent Owner’s Motion to Exclude (Paper 44). On August 22, 2018, Patent Owner filed a Reply to Petitioner’s Opposition to Patent Owner’s Motion to Exclude (Paper 46).

On August 29, 2018, the Board held a single oral hearing covering IPR2017-01407, IPR2017-01408, and IPR2017-01363, a transcript of which has been entered in the record. Paper 50 (“Tr.”).

We have authority under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–20 of the ’276 patent are unpatentable. The motion to amend is denied.

A. Related Proceedings

The parties state that there are no related district court proceedings. Pet. 2; *see also* Paper 3, 1. The parties note as related IPR2017-01407, which also challenges the ’276 patent. Pet. 2–3; Paper 3, 1. In addition, Petitioner identifies as related for case management purposes IPR2017-01363. *Id.*

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*B. The '276 Patent (Ex. 1001)*¹⁰

The '276 patent issued from the '088 Application¹¹, which is a continuation of the '793 Application¹², which was based on '007 Provisional Application¹³. Ex. 1001, [21], [60], [63]; Ex. 1009, 3.

The '276 patent is titled “Strength Training Apparatus With Flywheel and Related Methods” and relates to “strength training equipment including a flywheel and to related methods.” Ex. 1001, [54], 1:15–17.

The '276 patent describes a difficulty in integrating aerobic and anaerobic activities, i.e., it is more difficult to track or calculate calories burned when doing strength training exercises. *Id.* at 1:56–63. The '276 patent discloses a strength-training device that may include a cable and pulley system, a flywheel with a magnetic brake to provide resistance, and a torque sensor. *See id.* at 2:20–34. The flywheel may be combined with a drive mechanism and a one-way clutch that exerts a force on the flywheel in one direction when a user pulls a cable. *Id.* at 2:53–67. The device of the '276 patent may also include a console in communication with the magnetic brake to adjust the resistance and to display the amount of work performed. *Id.* at 2:39–52.

¹⁰ Petitioner has averred relation of the '276 patent back to a (pre-AIA) provisional application in satisfaction of the certification requirement of 37 C.F.R. § 42.104(a). *See* Pet. 5.

¹¹ U.S. Patent Application No. 15/019,088, filed Feb. 9, 2016 (Ex. 1009, 1–36, “the '088 Application”).

¹² U.S. Patent Application No. 14/213,793, filed Mar. 14, 2014 (Ex. 2005, Ex. 2006 (drawings), “the '793 Application”).

¹³ U.S. Provisional Patent Application No. 61/786,007, filed Mar. 14, 2013 (Ex. 2003, Ex. 2004 (drawings); *see also* Ex. 1010, “the '007 Provisional Application”).

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An embodiment of the device of the '276 patent is depicted below:

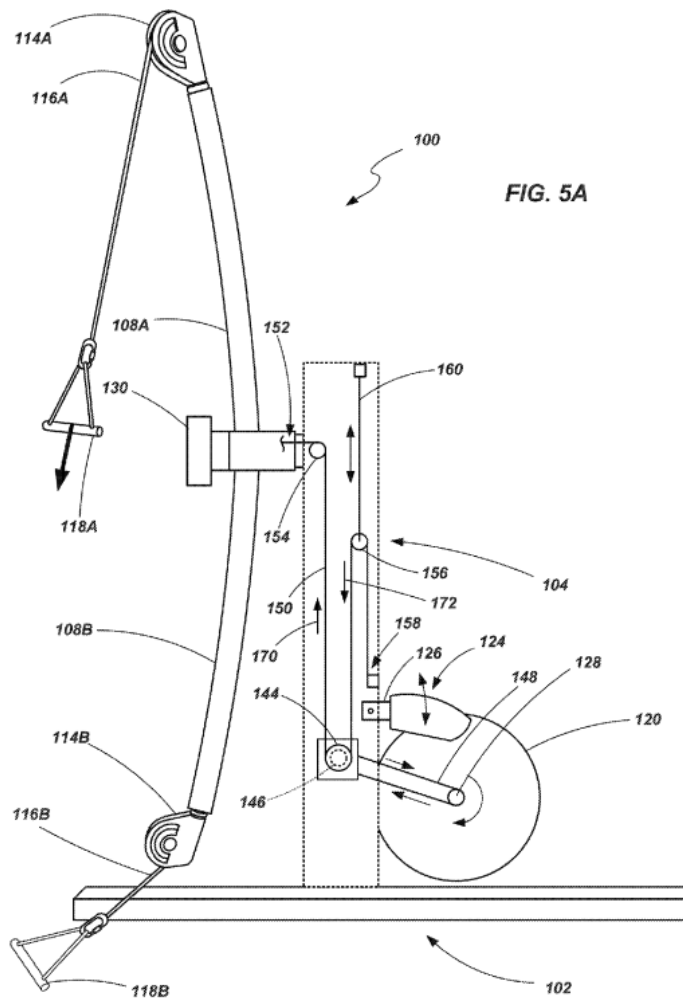


Figure 5A depicts a view of the strength training apparatus. *Id.* at 4:14–17. In particular, Figure 5A depicts displacement of handle 118A due to application of force by an individual during exercise. *Id.* at 6:37–41. Handle 118A is connected to cable 116A, which wraps around pulley 114A. *See id.* at 4:52–54.

Displacement of the handle 118A results in displacement of associated cable 116A and, ultimately, displacement of drive chain 150. *Id.* at 6:42–44. As indicated in Figure 5A, a first portion of drive chain 150 is

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displaced upwards towards first sprocket 154 as indicated by directional arrow 170 while a second portion of drive chain 150 is displaced downwards away from second sprocket 156 and towards input shaft 144 as indicated by directional arrow 172. *Id.* at 6:44–49. This displacement of the drive chain also includes the downward displacement of second sprocket 156 against the force of biasing members 160 as seen in both Figures 5A and 5B. *Id.* at 6:49–53. The displacement of drive chain 150 results in the rotation of input shaft 144, actuating drive mechanism 140 such that drive belt 148 drives flywheel 120. *Id.* at 6:53–56.

In one example, input device 132 (depicted in Figure 1) of control panel 130 may be used to set a desired resistance level that is to be applied to flywheel 120 by controlling an actuating member associated with braking mechanism 124. *Id.* at 5:52–55. Output device 134 (e.g., a display) may indicate the current or selected level of resistance. *Id.* at 5:55–57, Fig. 1. Output device 134 of control panel 130 may also provide an indication of the amount of work performed within a period of time calculated, for example, based on the torque applied to flywheel 120 as measured by torque sensor 128. *Id.* at 5:57–61.

C. Illustrative Claim

Claim 1, reproduced below, is the sole independent challenged claim in this proceeding and is illustrative of the subject matter:

1. A strength training apparatus, comprising:
 - a base member;
 - a tower structure coupled to the base member;
 - at least one arm coupled to the tower structure;
 - a pulley being coupled to the at least one arm;
 - a cable extending through the pulley;
 - a handle coupled to a first end of the cable;
 - a flywheel connected to the tower structure;

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a magnetic braking mechanism that resists movement of the flywheel; and

a console in communication with the magnetic braking mechanism;

wherein displacement of the handle results in rotation of the flywheel.

Ex. 1001, 8:23–36.

II. ANALYSIS OF GROUNDS ASSERTED IN PETITION

A. Claim Construction

In this *inter partes* review, filed May 12, 2017, a claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears. 37 C.F.R. § 42.100(b) (2016); *see also* *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (affirming that USPTO has statutory authority to construe claims according to 37 C.F.R. § 42.100(b)). Under that standard, and absent any special definitions, we give claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definitions for claim terms must be set forth with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner requests construction of the following terms: “sprocket” (claims 3, 4, 17, 18, 20); “in communication with” (claims 1, 3, 11, 14, 17, 20); “biasing member” (claims 2, 3, 16, 17, 20); “connected to/fixed to” (claims 1, 3, 10); and “drive mechanism” (claims 11, 12, 14, 20). Pet. 7–10. Patent Owner does not request construction of any terms. In our Decision on Institution, we set forth preliminary constructions of the five terms

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identified by Petitioner. Neither party has contested the constructions set forth in the Decision on Institution. After considering all evidence and arguments anew, we determine that it is proper to maintain the constructions, which we discuss as follows.

1. “sprocket” (claims 3, 4, 17, 18, 20)

Petitioner proposes that the broadest reasonable interpretation of “sprocket” is “a cylindrical element upon which a chain, cable, rope, or belt can be guided.” Pet. 7. Petitioner argues that the Specification teaches that pulleys and sprockets are interchangeable based on the statement in the Specification that “drive chain 150 extends through several pulleys or sprockets.” *See id.* at 7–8 (citing Ex. 1001, 6:23–24). Petitioner also relies on Dr. Rawls for the understanding that the ’276 patent must allow for structures that work with cables, chains, belts, ropes, or other pulling elements. *Id.* at 8 (citing Ex. 1008 ¶¶ 90–91). In other words, Petitioner argues that the ’276 patent makes use of cables which work with pulleys.

In the Decision on Institution, we set forth the preliminary construction of “sprocket” to mean “a wheel with teeth.” Dec. 8–9. We reasoned that “[t]he plain and ordinary meaning of sprocket as a wheel with teeth is consistent with the usage in the Specification and the claims, which differentiates sprockets from pulleys.” *Id.* (citing Ex. 1001, 4:50–58, 6:17–27; Ex. 3001).

Although there may be areas of functional overlap between a sprocket and a pulley, the parties appeared to be in agreement that a sprocket has teeth, that a pulley does not have teeth, and Petitioner indicated that it did not contest the preliminary construction of “sprocket” set forth in the Decision on Institution. *See* Tr. 49:1–8, 76:1–20.

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After considering all evidence and arguments anew, we determine that it is proper to maintain our construction of sprocket from institution as “a wheel with teeth.” *See* Ex. 3001.

2. “*in communication with*” (*claims 1, 3, 11, 14, 17, 20*)

Petitioner asserts that the broadest reasonable interpretation of “in communication with” is “direct or indirect connection to, or exchange.” Pet. 8 (citing Ex. 1008 ¶ 94).

In the Decision on Institution, we set forth the preliminary construction of “in communication with” to mean “in direct or indirect connection to.” Dec. 9.

After considering all evidence and arguments anew, we determine that it is proper to maintain our construction of “in communication with” to mean “in direct or indirect connection to.”

3. “*biasing member*” (*claims 2, 3, 16, 17, 20*)

Petitioner asserts that the broadest reasonable interpretation of “biasing member” is a “component that applies force to machine elements toward their original positions.” Pet. 8–9 (citing Ex. 1008 ¶ 92).

In the Decision on Institution, we set forth the preliminary construction of “biasing member” to mean “a component that applies force to machine elements toward their original positions.” Dec. 9–10.

After considering all evidence and arguments anew, we determine that it is proper to maintain our construction of “in communication with” to mean a “component that applies force to machine elements toward their original positions.”

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4. *“connected to/fixed to” (claims 1, 3, 10)*

Petitioner asserts that the broadest reasonable interpretation of “connected to/fixed to” is “attached directly or indirectly via intermediate components.” Pet. 9–10 (citing Ex. 1008 ¶¶ 95–96).

In the Decision on Institution, we set forth the preliminary construction of “connected to/fixed to” to mean “in direct or indirect connection to.” Dec. 10–11.

After considering all evidence and arguments anew, we determine that it is proper to maintain our construction of “connected to/fixed to” to mean “in direct or indirect connection to.”

5. *“drive mechanism” (claims 11, 12, 14, 20)*

Petitioner asserts that the broadest reasonable interpretation of “drive mechanism” is “a mechanism that transfers power.” Pet. 9 (citing Ex. 1008 ¶ 93).

In the Decision on Institution, we set forth the preliminary construction of “drive mechanism” to mean “a mechanism that transfers power.” Dec. 10.

After considering all evidence and arguments anew, we determine that it is proper to maintain our construction “drive mechanism” to mean “a mechanism that transfers power.”

B. Principles of Law

To prevail in its challenges to the patentability of the claims, Petitioner must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d).

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that

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the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17–18 (1966).

C. Obviousness of Claims 1–4 and 10 over Wu (Ex. 1002) and Jones (Ex. 1005)

Petitioner contends that claims 1–4 and 10 are unpatentable as obvious over Wu and Jones. Pet. 19–22, 24–38.

1. Overview of Wu

Wu is titled “Weight Lifting Exerciser” and relates to an exerciser using a non-friction magnetic resistance device to create a proper exercise resistance. Ex. 1002, [54], ¶ 2. Wu discloses that the machine utilizes a flywheel that travels unidirectionally and that resistance force will not be

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created in the return direction of the pulling elements. *Id.* ¶¶ 1, 7, 13. A preferred embodiment is depicted in Figure 1 below:

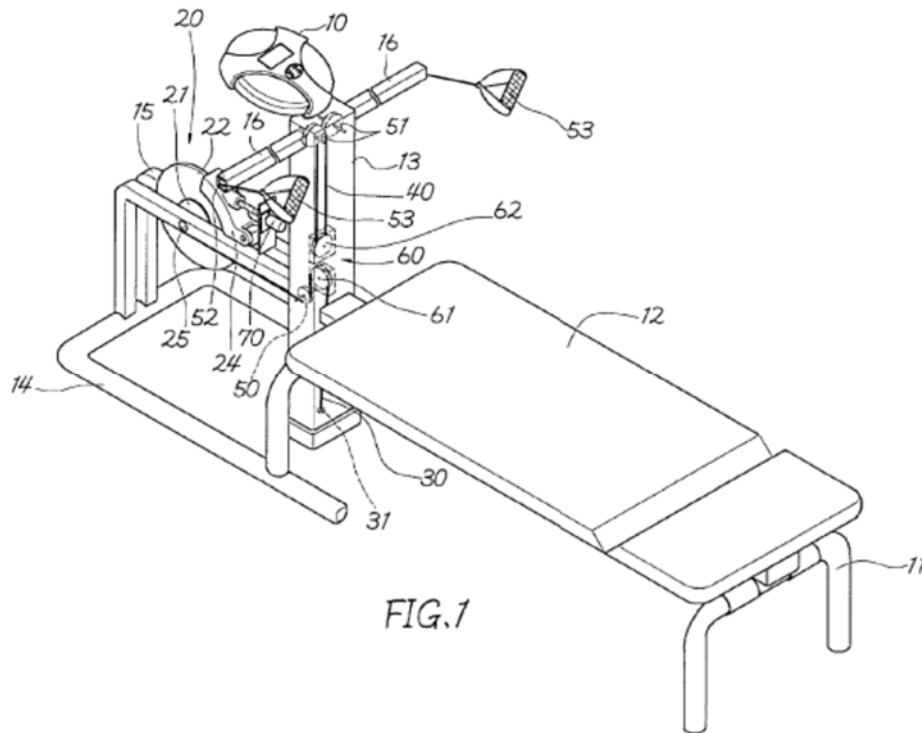


Figure 1 depicts a perspective view of a preferred embodiment. *Id.* ¶ 9.

Electronic element 70 drives magnet set 24 to adjust the clearance between unidirectional flywheel 22 and magnet set 24 so as to obtain an expected exercise resistance. *Id.* ¶ 13.

2. Overview of Jones

Jones is titled “Rowing Machine” and relates to exercise equipment and more particularly, to a machine for exercising the muscles and practicing the skills that are used in rowing. Ex. 1005, [54], 1:11–13. Jones discloses a rowing exerciser that has a horizontal frame with a seat mounted for movement along the frame, foot rests, a rotatable flywheel, handle means for rotating the flywheel, and an eddy current brake coupled to the flywheel

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to resist rotation of the flywheel. *Id.* at 1:65–2:2. Figure 4 is reproduced below:

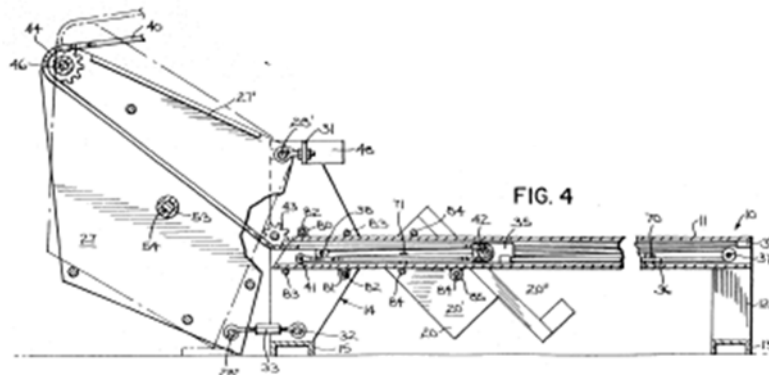


Figure 4 depicts a view in vertical section of an embodiment of Jones. *Id.* at 2:64–3:4.

When a user pulls on a handle, handle chain 40 will be extended, thereby stretching tension cord 36, so that on release of the pulling force, tension cord 36 will cause slide block 35 to withdraw rearwardly within horizontal member 11 and the handle will be moved towards drive sprocket

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44. *Id.* at 4:17–23. Jones’s drive mechanism is depicted in Figure 10, which is reproduced below:

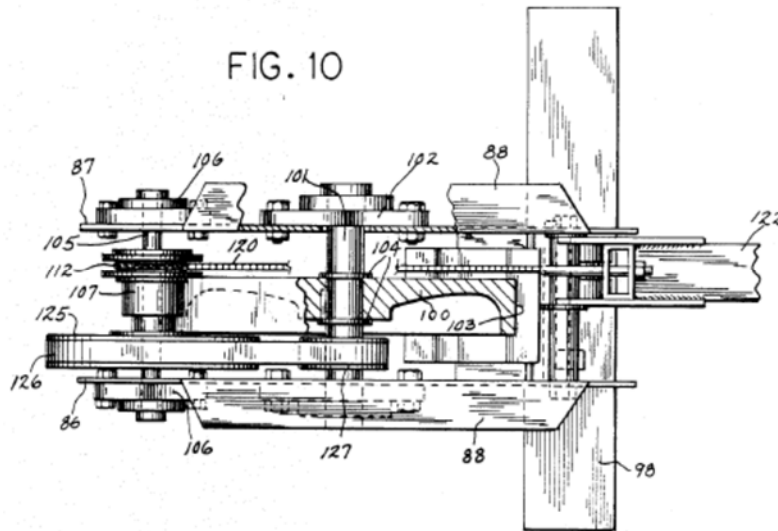


Figure 10 is a top plan view of the flywheel mechanism of a second embodiment. *Id.* at 3:15–19.

As the handle is pulled outwardly by the user, chain 120 will rotate sprocket 112 and the rotation will be imparted to drive shaft 105 through one-way clutch 107. *Id.* at 8:1–4. Toothed belt 126 will transmit the rotation of drive shaft 105 to flywheel shaft 101 and then to flywheel 100. *Id.* at 8:11–16. When the handle is retracted, one-way clutch 107 will free wheel and will not impart rotation to drive shaft 105. *Id.* at 8:4–10.

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An aspect of Jones's drive mechanism, depicted in Figure 11, is reproduced below:

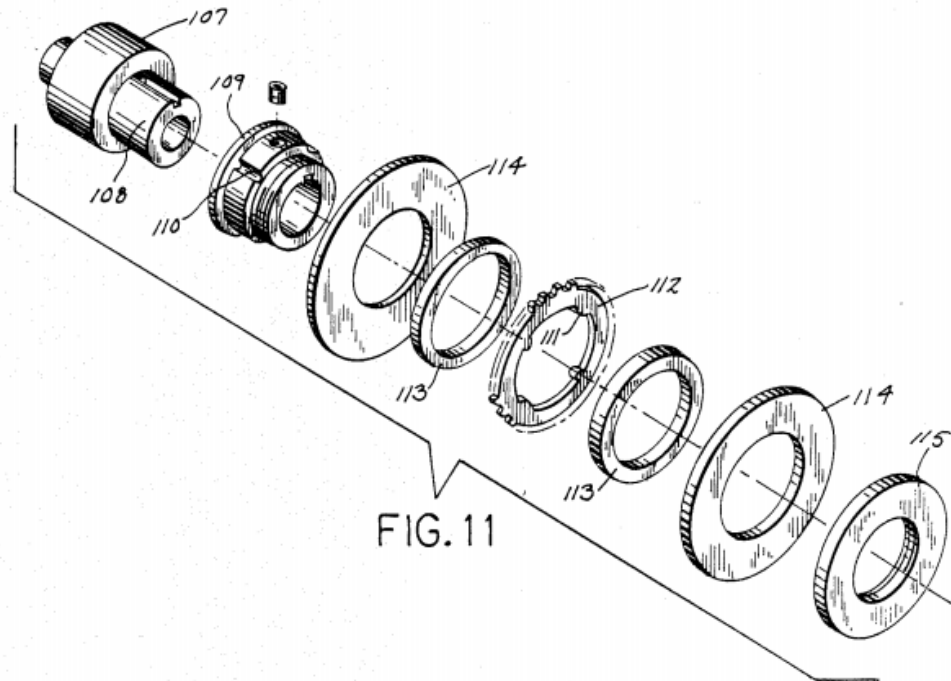


Figure 11 is an exploded view in perspective of the sprocket and one-way clutch assembly of the drive shaft of the second embodiment. *Id.* at 3:20–22.

The assembly includes one-way clutch 107 keyed to the drive shaft 105. *Id.* at 7:48–49. Clutch 107 includes axially extending hub 108 on which is keyed sprocket hub 109. *Id.* at 7:49–51. Sprocket hub 109 has a series of spline recesses 110 which receive splines 111 of sprocket wheel 112. *Id.* at 7:51–53. Spacers 113 are disposed on either side of sprocket wheel 112 on hub 109 and keeper plates 114 are mounted on hub 109 outside of each spacer 113. *Id.* at 7:53–56. The assembly of sprocket wheel 112, spacers 113 and keeper plates 114 is held in place on sprocket hub 109 by threaded end cap 115 mounted on an external threaded portion of sprocket hub 109. *Id.* at 7:56–60.

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3. Analysis

In its Petition, Petitioner sets forth its contentions as to how the limitations of claims 1–4 and 10 are disclosed in, or obvious over, the combination of Wu and Jones. Pet. 24–38. As noted above, Patent Owner did not file a Patent Owner Response. Thus, the record contains only Petitioner’s contentions and evidence and no responsive evidence or argument from Patent Owner.

a. Independent claim 1

i. preamble, “a base member,” and “a tower structure coupled to the base member”

Petitioner asserts, *inter alia*, that Wu discloses a strength training apparatus with a base and a tower coupled thereto. Pet. 24–25 (citing, e.g., Ex. 1002, Title, Abstract, ¶ 13, Fig. 2; Ex. 1008 ¶¶ 245–247). We find that Wu discloses these limitations. In particular, Wu discloses front frame 11 and rear frame 14, which collectively support upright post 13 and parallel bars 15. Ex. 1002 ¶ 13, Figs. 1, 2. We determine that front frame 11 and rear frame 14 constitute a base, and that upright post 13 with parallel bars 15 constitute a “tower structure.”

ii. “at least one arm coupled to the tower structure,” “a pulley being coupled to at least one arm,” “a cable extending through the pulley,” and “a handle coupled to a first end of the cable”

Petitioner asserts, *inter alia*, that Wu discloses an arm coupled to the tower, a pulley coupled to an arm, a cable extending through a pulley, and a handle coupled to the cable. Pet. 25–27 (citing, e.g., Ex. 1002 ¶ 16, Figs. 1, 3; Ex. 1008 ¶¶ 248–252). We find that Wu discloses these limitations. In particular, Wu discloses hollow arms 16 coupled to upright post 13, with guide pulleys 52 at the ends of hollow arms 16, cable (“second pulling

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element”) 40 passing through guide pulleys 52, and grips 53 fitted to both ends of cable 40. *See* Ex. 1002 ¶ 16, Figs. 1, 3; Ex. 1008 ¶¶ 248–252.

iii. “a flywheel connected to the tower structure”

Petitioner asserts, *inter alia*, that Wu discloses flywheel 22 connected to parallel bars 15, via shaft 25, and that flywheel 22 is, in any event, indirectly connected to upright post 13. Pet. 27–28 (citing, e.g., Ex. 1002 ¶ 16, Figs. 2, 3; Ex. 1008 ¶ 253). On this record, we are persuaded that Petitioner has made an adequate showing. In particular, Wu discloses that magnetic resistance device 20, which includes flywheel 22, is movable through shaft 25 and provided between parallel bars 15. Ex. 1002 ¶ 13, Figs. 2, 3.

iv. “a magnetic braking mechanism that resists movement of the flywheel” and “a console in communication with the magnetic braking mechanism”

Petitioner asserts, *inter alia*, that Wu discloses a magnetic braking mechanism and a console in communication therewith. Pet. 28–29 (citing, e.g., Ex. 1002 ¶¶ 13, 19, claims 2, 3, 8, 9; Ex. 1008 ¶¶ 44–55, 244–256). We find that Wu discloses these limitations. In particular, Wu discloses magnetic set 24 and console 10. Ex. 1002 ¶¶ 13, 19. Wu further discloses that resistance on the device is adjustable. *Id.* Wu discloses that electronic adjustment element 70 is utilized to drive magnet set 24 for adjusting the clearance between magnet set 24 and flywheel 22 to obtain an expected exercise resistance. *Id.* ¶ 13. Wu discloses that a user can set a heartrate on the console such that if there is insufficient or excess heartrate, the console will command electronic adjustment element 70 to adjust the resistance. *Id.* ¶ 19. Although setting a heartrate is not a direct way to adjust resistance, the

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claim does not require more than communication between the console and the magnetic braking mechanism, which is present.

v. “*wherein the displacement of the handle results in rotation of the flywheel*”

Petitioner asserts, *inter alia*, that Wu’s device possesses the functionality recited in the “wherein” clause. Pet. 29 (citing, e.g., Ex. 1002 ¶ 17; Ex. 1008 ¶¶ 257–258). We find that Wu discloses this limitation. In particular, Wu discloses that when grips 53 are pulled, pulling element 30 causes coiling wheel 21 and unidirectional flywheel 22 to rotate synchronously. Ex. 1002 ¶ 17.

vi. Summary

We determine that Wu renders obvious independent claim 1. We determine that Jones is not essential to the asserted ground of unpatentability with respect to independent claim 1.

b. claims 2 and 10

Claim 2 depends from claim 1 and further recites “a biasing member that returns the handle without causing rotation of the flywheel.” Ex. 1001, 8:37–39. Petitioner asserts that Jones discloses an elastic cord, or tension cord 36 (biasing member), that connects from an anchor point to slide block 35 through a series of pulleys. Pet. 30 (citing Ex. 1005, 4:3–5). Petitioner argues that a person of ordinary skill would understand that when a single pull cable or chain is fixed to a frame on one end and has a user pull handle on the other, routing the cable or chain over a displaceable pulley or sprocket connected to a tension cord will cause the handle to retract when a user releases her pulling force. *Id.* at 30–31 (citing Ex. 1018 ¶¶ 262–263). Petitioner asserts that Jones discloses such a relationship. *Id.* at 31 (citing Ex. 1005, 4:1–25). Petitioner asserts that Jones’s flywheel rotates only in a

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first direction (when a user pulls the cable or chain) because of one-way clutch 107. *Id.* at 31–32 (citing Ex. 1005, 8:1–10, Fig. 4; Ex. 1008 ¶¶ 263–265).

We find Jones discloses this limitation. In particular, Jones discloses that “[w]hen a user pulls upon the handle 47, the handle chain 40 will be extended thereby stretching the tension cord 36 so that, upon release of the pulling force on the handle by the user, the tension cord 36 will cause the slide block 35 to withdraw rearwardly ... and the handle 47 will be moved towards the drive sprocket 44.” Ex. 1005, 4:17–23. This satisfies the recited retraction of the handle. Jones discloses that when the handle is retracted, one way clutch 107 will freewheel and will not impart rotation to the drive shaft, such that flywheel 100 can continue in its previous momentum. Ex. 1005, 8:4–8.

Claim 10 depends from claim 1 and further recites “wherein the cable includes a second end that is fixed to the tower structure.” Ex. 1001, 8:61–63. Petitioner relies on Jones for this limitation. Pet. 38 (citing Ex. 1005, 4:8–10, Fig. 4). We find that Jones discloses the recited anchoring. In particular, Jones discloses that its cable/chain is “anchored within the horizontal member 11 at anchor point 41.” Ex. 1005, 4:8–10, Fig. 4. Horizontal member 11 is part of the frame. *See id.* at 3:37–47.

Petitioner argues that a person of ordinary skill would have implemented Jones’s configuration inside of Wu to allow extension of cables through a longer structure, to provide a simpler and more reliable design than a coiling apparatus, and to prevent mechanical failure. Pet. 33 (citing Ex. 1008 ¶¶ 265–266). We are persuaded that a person of ordinary skill would have sought to implement a biasing member, as taught by Jones,

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in Wu’s device in order to allow extension of a cable in a compact machine and to prevent mechanical failure. *See* Ex. 1008 ¶¶ 163, 265–266.

Accordingly, we determine that Petitioner has shown that claims 2 and 10 are obvious over Wu and Jones.

c. claims 3 and 4

Claim 3 depends from claim 2 and further recites “wherein the biasing member is in communication with a sprocket, and the cable extends through the sprocket.” Ex. 1001, 8:40–42. Claim 4 depends from claim 3, and further recites “wherein the sprocket is displaceable relative to the tower structure when the handle is pulled.” *Id.* at 8:43–45.

Petitioner asserts, *inter alia*, that Jones’s elastic cord 36 (biasing member) is in communication with sprocket 42. Pet. 34–36 (citing Ex. 1005, 4:10–11, 7:61–67; Ex. 1008 ¶ 269–270). We find that Jones discloses these limitations. In particular, Jones discloses that chain 40 extends around idler sprocket 42 on slide block 35. Ex. 1005, 4:10–12. Tension cord 36 is attached to slide block 35, on which idler sprocket 42 is located. *Id.* at 4:10–12. When the user pulls upon the handle 47, the handle chain 40 will be extended thereby stretching the tension cord 36 so that, upon release of the pulling force on the handle by the user, the tension cord 36 will cause the slide block 35 to withdraw rearwardly within the horizontal member 11 and the handle 47 will be moved towards the drive sprocket 44. *Id.* at 4:16–24.¹⁴ Petitioner asserts that a person of ordinary skill would have sought to combine the teachings of Wu and Jones, *inter alia*, to enable a user to pull a

¹⁴ We understand the recited “cable” to be able to be satisfied by a chain in this context because the cable is recited as extending through a sprocket. As such, we understand chain 40 to satisfy the recited cable.

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long length of cable out during exercise, while requiring only half of the travel distance from the biasing member. Pet. 19–21 (citing Ex. 1008 ¶ 163). We conclude that Petitioner has shown that a person of ordinary skill in the art would have sought to create a more compact machine. *See* Ex. 1008 ¶ 163. Accordingly, we determine that Petitioner has shown that claims 3 and 4 are obvious over Wu and Jones.

D. Obviousness of Claims 5 and 6 Over Wu and Webb (Ex. 1003)

Petitioner contends that claims 5 and 6 are unpatentable as obvious over Wu and Webb. Pet. 20, 39–41.

1. Overview of Webb

Webb is titled “Multi-Functional Weight Training Machine With Horizontal and Vertical Axes of Rotation” and relates to exercise and weight training equipment. *See* Ex. 1003, [54], ¶ 1. Webb discloses an exercise machine that includes a frame, a pair of arm assemblies, a pair of handle

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units, a coupling unit, and a resistance imparting unit, with arms that are pivotable. *Id.* ¶ 6. Figure 1 of Webb is depicted below:

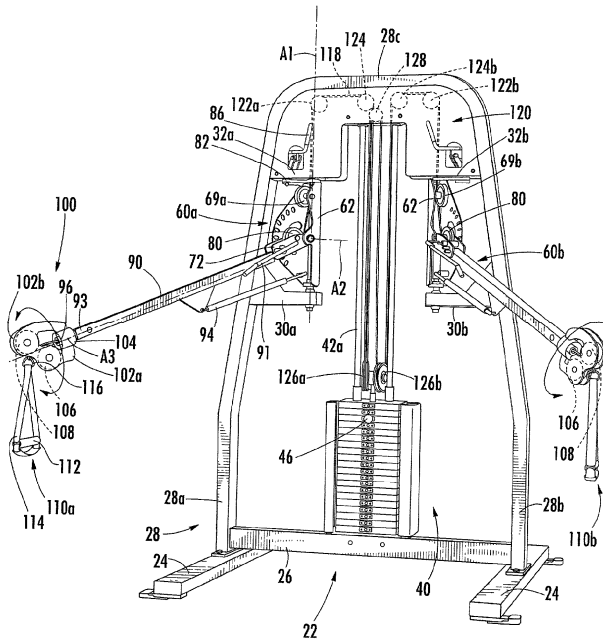


Figure 1 of Webb is a perspective view of the machine with the arms in a generally horizontal direction. *Id.* ¶ 9.

Arm assembly 60a is attached to frame 22 via mounting bracket 62. *Id.* ¶ 28. The insertion of pin 88 into one of the apertures 84 prevents rotation of mounting bracket 62 about axis A1. *Id.* ¶ 29, Fig. 2.

2. Analysis

Claim 5 depends from claim 1 and further recites “wherein the at least one arm is pivotably coupled to the tower structure.” Ex. 1001, 8:46–47. Claim 6 depends from claim 5 and further recites “wherein the at least one arm is movable with respect to the tower structure to position the handle at multiple locations with respect to the tower structure.” *Id.* at 8:48–51. Petitioner asserts that Webb discloses the recited arm assemblies. Pet. 39–

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41 (citing Ex. 1003 ¶¶ 16, 36–37, 39, 42; Ex. 1008 ¶¶ 276–279). We find that Webb discloses these limitations. In particular, Webb discloses arms that are pivotable about generally horizontal and vertical axes. Ex. 1003, [54], ¶ 6. Petitioner asserts that a person of ordinary skill in the art would have modified the device of Wu with the arms of Webb in order to increase the number of exercises that may be performed. Pet. 19–20 (citing Ex. 1008 ¶ 158). We are persuaded that a person of ordinary skill would have sought to add pivotable arms to increase the range of motion of the exercise apparatus. Ex. 1008 ¶ 158.

Accordingly, we determine that Petitioner has shown that claims 5 and 6 are obvious over Wu and Webb.

E. Obviousness of Claims 7–9 and 11–20 Over Wu, Watson, and Jones

Petitioner contends that claims 7–9 and 11–20 are unpatentable as obvious over Wu, Watson, and Jones. Pet. 20–22, 41–51.

1. Overview of Watson

Watson is titled “Closed Loop Control of Resistance in a Resistance-Type Exercise System” and relates to an exercise device or system that incorporates a rotating member for resisting input forces by a user, and a resistance control arrangement in such a system. *See* Ex. 1004, [54], ¶ 2.

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Watson discloses that the rotating member may be the wheel of a bicycle.

Id. ¶ 10. Figure 5 of Watson is depicted below:

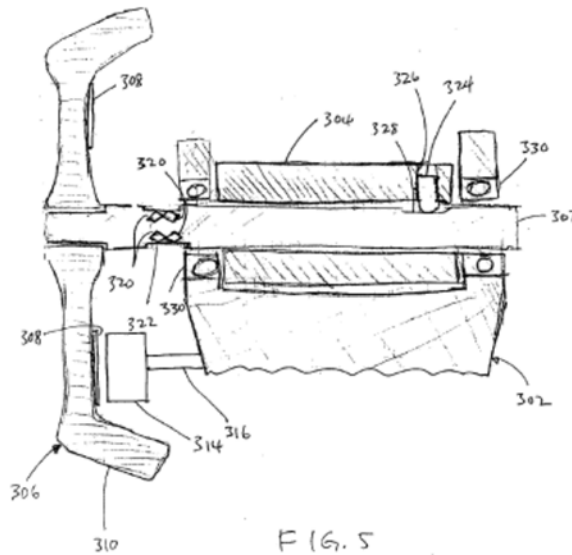


Figure 5 of Watson is a partial longitudinal view of the resistance unit.
Id. ¶ 20.

Figure 5 depicts an embodiment with a rotational torque sensor, which may be in the form of strain gauges 320, which rotate with shaft 307.

Id. ¶ 43. Watson discloses that the rotational torque sensor is used to determine the degree of resistance to rotation of flywheel 306 by magnet assembly 312. *Id.*

2. Analysis

a. claim 7

Claim 7 depends from claim 1 and further recites “a torque sensor proximate the flywheel.” Ex. 1001, 8:52–53. Petitioner asserts that Watson discloses the recited torque sensor. Pet. 41–42 (citing Ex. 1004 ¶¶ 43, 62; Ex. 1008 ¶¶ 280–282). We find that Watson discloses the limitation. In particular, Watson discloses strain gauges 320 proximate flywheel 306. *See* Ex. 1004 ¶ 43, Fig. 5. Petitioner contends that it would have been obvious

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to a person of ordinary skill to have further modified the apparatus of Wu with Watson’s sensor to sense torque and to generate user performance data which has long been demanded in the industry. Pet. 20–21 (citing Ex. 1008 ¶¶ 56–71, 159). We are persuaded that a person of ordinary skill would have been motivated to combine the teachings of Watson with those of Wu to generate user data and to better control the resistance apparatus. *See* Ex. 1008 ¶ 159. Accordingly, we determine that Petitioner has shown that claim 7 is obvious over Wu, Watson, and Jones.

b. claim 8

Claim 8 depends from claim 7 and further recites “wherein the console is configured to provide an indication of an amount of work upon rotation of the flywheel.” Ex. 1001, 8:54–56. The Petition asserted a ground based on Wu, Watson, and Jones. Pet. 42–43. Petitioner relies on the teaching in Watson that a console may display an amount of power. *Id.* (citing, e.g., Ex. 1004 ¶¶ 30–32, 51, 62, 64, 66; Ex. 1008 ¶¶ 61, 283–284). Petitioner’s Declarant additionally relied on Street. Ex. 1008 ¶ 61 (*cited in id.* ¶ 207). We stated in the Decision on Institution that we understood the ground to be based on Wu, Watson, Jones, and Street. Dec. 23. Subsequently, we modified the Decision on Institution pursuant to SAS to proceed on the basis of all claims and all grounds in the Petition. Paper 18 (citing *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348 (2018)).

The Decision on Institution cited as authority *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1312–13 (Fed. Cir. 2015), with a parenthetical for the proposition that governing statutory provisions do not limit the Board’s authority to proceed with AIA trial proceedings only on the specific statutory grounds alleged in the Petition. Dec. 23. We recognize that SAS

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has modified the Board’s practice on institution. We, therefore, begin our analysis anew, recognizing that Street is not part of the Petition though it remains evidence of record, and is referred to in the Rawls Declaration.

In the Petition, Petitioner relies on the description in Watson of reporting power. Pet. 42–43 (citing Ex. 1004 ¶¶ 30–32, 51, 62, 64, 66). Watson discloses that a user may adjust power (Ex. 1004 ¶ 64) and that a display can report power (*id.* ¶ 66). The Petition asserts that a person of ordinary skill would understand that the power displayed is the work done in unit time and that measuring the power is one well-known way to measure and display the amount of work being done. Pet. 43 (citing Ex. 1008 ¶¶ 283–284). We interpret Petitioner’s argument that the conversion of work to power is “well-known” as an argument based on “common knowledge.” The Office Trial Practice Guide provides for reliance on “common knowledge” for a limitation in a ground based on obviousness where it is undisputed that it is common knowledge and it is supported by the evidence of record. The Office Trial Practice Guide Update (“Update”) (August 2018) at 5 (discussing *K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365 (Fed. Cir. 2014)).¹⁵ Here, it is undisputed that it is common

¹⁵ The Office Trial Practice Guide Update (“Update”) (August 2018) provides:

a petitioner asserting anticipation cannot rely on its expert to supply disclosure of a claim element that is not expressly or inherently present in the reference. Similarly, in an obviousness analysis, conclusory assertions from a third party about general knowledge in the art cannot, without supporting evidence of record, supply a limitation that is not evidently and indisputably within the common knowledge of those skilled in the art. *K/S*

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knowledge that “calories” are a measure of work performed, that power is work in a period of time, and that power can be converted to work, e.g., after a period of exercise. *See* Ex. 1008 ¶¶ 61, 283–284. Petitioner’s assertion that power may be converted to work is supported by the evidence of record in the form of the Rawls Declaration and Street, cited therein. Mr. Rawls explains that power over a period of time can be converted to work. *Id.* Mr. Rawls persuasively indicates that a user of the exercise machine would have been interested in the number of calories burned (work performed) to monitor aspects of the user’s workout. *See id.* ¶¶ 56, 61, 284. For these reasons, we determine that Petitioner has satisfied its burden, and has established that claim 8 is obvious over Wu, Watson, and Jones.

c. claim 9

Claim 9 depends from claim 7 and further recites “wherein the console further includes an input for selecting an amount of resistance applied by the magnetic braking mechanism to the flywheel.” Ex. 1001, 8:57–60. Petitioner asserts that Wu and Watson both disclose an electronic console in communication with a resistance mechanism and it would have been obvious to include a console on the machine taught by Wu. Pet. 43–44 (citing Ex. 1002 ¶¶ 13, 19; Ex. 1004 ¶¶ 30–32, 51, 62, 66; Ex. 1008 ¶ 208). Petitioner asserts that Wu discloses an electronic resistance adjusting element for adjusting the clearance between a unidirectional flywheel and a

Himpp v. Hear-Wear Techs., LLC, 751 F.3d 1362, 1365 (Fed. Cir. 2014).

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magnet set so as to obtain an expected exercise resistance. Pet. 43–44 (citing Ex. 1002, claims 5, 7). Petitioner asserts that a person of ordinary skill would understand that Wu’s electronic resistance adjusting element could be accessed through a console, and that Watson also discloses multiple examples of how a user can directly or indirectly control the level of resistance of a variety of braking mechanisms from a console or computer. Pet. 44 (citing Ex. 1008 ¶ 208; Ex. 1004 ¶ 51).

We find that Wu discloses a mechanism for electronic adjustment of a magnetic braking mechanism (Ex. 1002 ¶ 13, claims 5, 7), that Wu discloses a console (*id.* ¶ 13, Fig. 1), and that Wu discloses automatically adjusting the braking mechanism via the console in response to a change in heartbeat (*id.* ¶ 19). However, Wu does not expressly disclose that a user can select an amount of resistance using the console, and Petitioner has not shown that this necessarily would have been present in Wu.

We agree that Watson is evidence that a user can adjust braking with the console. Ex. 1004 ¶ 51. Viewing the evidence as a whole, we are persuaded by Petitioner that it would have been obvious to modify Wu’s device, such that a user can adjust the braking using a console, as taught by Watson. We credit Mr. Rawls’s testimony that the combination would be the use of known elements to produce predictable results because the individual elements would each maintain their function in the combined device, and this is indicative of obviousness. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007) (citing *United States v. Adams*, 383 U.S. 39, 50–52 (1966)).

Petitioner contends that Wu’s console could have been used to select an amount of resistance, or that it would have been obvious to configure

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Wu's console to select an amount of resistance based on Watson's teachings, and that there would have been consumer demand for this function. *See* Pet. 20 (citing Ex. 1008 ¶¶ 56–71). We agree that a person of ordinary skill would have sought to use a console to adjust magnetic resistance, as taught by Watson, i.e., for ease of use with a common interface, and as the use of known elements to produce predictable results. *See also* Ex. 1008 ¶¶ 56–71; *KSR*, 550 U.S. 347, 419 (2007). Accordingly, we determine that Petitioner has shown that claim 9 is obvious over Wu, Watson, and Jones.

d. claim 11

Claim 11 depends from claim 1 and further recites “wherein the cable is in communication with a drive mechanism, and the drive mechanism is attached to a shaft supporting the flywheel through a drive belt.” Ex. 1001, 8:64–67. Petitioner asserts that Jones discloses an exercise machine with a magnetic flywheel, a drive mechanism, and a drive belt transmitting power to the separate flywheel shaft. Pet. 46 (citing Ex. 1005, 7:60–8:27, Figs. 9–10). We find Jones discloses this limitation. In particular, Jones discloses chain 120 will rotate sprocket 112, and that rotation will be imparted to drive shaft 105 through one-way clutch 107. Ex. 1005, 8:2–4. Drive shaft 105 also mounts toothed belt drive 126, which also engages driven belt sprocket 127 keyed to flywheel shaft 101. *Id.* at 8:11–14. Toothed belt 126 will transmit the rotation to flywheel shaft 101 and then to flywheel 100. *Id.* at 8:14–16.

Petitioner asserts, *inter alia*, that a person of ordinary skill would have been motivated, to include the teachings of Jones with the flywheel resistance mechanism of Wu because such a system would allow the person of ordinary skill to optimize the ratio between the user's pulling force and

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the flywheel's rotational speed (and thus the resistance experienced). Pet. 47–48 (citing Ex. 1008 ¶¶ 293–294). We are persuaded that a person of ordinary skill would have sought to include the drive mechanism of Jones in the device of Wu in order to optimize the ratio between the user's pulling force and the flywheel's rotational speed, to optimize resistance. *See* Ex. 1008 ¶¶ 293–294. Accordingly, we determine that Petitioner has shown that claim 11 is obvious over Wu, Watson, and Jones.

e. Claim 12

Claim 12 depends from claim 11 and further recites “wherein the drive mechanism includes an input shaft and an output shaft.” Ex. 1001, 9:1–3. Petitioner asserts that a person of ordinary skill would understand that Jones's sprocket 112 and one-way clutch 107 are an input shaft, and drive shaft 105 is an output shaft that is driven by the sprocket/clutch arrangement. *See* Pet. 48 (citing Ex. 1008 ¶ 295). Mr. Rawls provides testimony that a person of ordinary skill would have this understanding. Ex. 1008 ¶ 295. We find that Jones discloses this limitation. Jones discloses that clutch 107 includes an axially extending hub 108, which is keyed to sprocket hub 109. Ex. 1005, 7:49–51. Sprocket hub 109 has a series of spline recesses 110 which receive the splines 111 of sprocket wheel 112, and sprocket 112 is held in place on sprocket hub 109, along with spacers, by a threaded end cap 115. *Id.* at 7:51–7:54, 7:56–60. We credit Mr. Rawls's testimony that Jones's clutch 107 together with sprocket 112 constitute an input shaft, as consistent with Jones's disclosure. In particular, axially

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extending hub 108, which is part of clutch 107, is a shaft that receives input from sprocket 112. *See* Ex. 1005, 7:49–51, 8:1–8:8, Fig. 11.

Jones discloses that drive shaft 105 is an output shaft because it receives momentum from one-way clutch 107, when the handle is pulled outwardly. *Id.* at 8:1–8:8.

Accordingly, we determine that Petitioner has shown that claim 12 is obvious over Wu, Watson, and Jones.

f. Claim 13

Claim 13 depends from claim 12 and further recites “wherein the input shaft is rotational in a first direction and a second direction opposite the first direction, and the output shaft is rotational in just the first direction.” Ex. 1001, 9:4–7. Petitioner relies on the one-way clutch of Jones for this functionality. Pet. 48–49 (citing Ex. 1005, 8:1–10, 1008 ¶ 296). We find that Jones’s one-way clutch only transmits momentum to drive shaft 105 when the handle is pulled but not when the handle is retracted. Ex. 1005, 8:1–10. Accordingly, we determine that Petitioner has shown that claim 13 is obvious over Wu, Watson, and Jones.

g. Independent claim 14

Claim 14 is an independent claim that contains similar language and requirements as independent claim 1 in combination with dependent claims 11–13, and further recites that the output shaft is concentric and disposed within the input shaft. *Compare* Ex. 1001, 9:8–32, *with id.* at 8:23–36, 8:64–9:7. Petitioner, relying on the testimony of Mr. Rawls, asserts that Jones’s output shaft 105 is concentric with and disposed within one-way clutch 107 and its associated sprockets. Pet. 49 (citing Ex. 1005, Figs. 9–10; Ex. 1008 ¶ 296). We credit the testimony of Dr. Rawls as consistent with

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the disclosure of Jones. In particular, we find that axial hub 108 is disposed within and concentric with sprocket hub 109 (*see* Ex. 1005, Fig. 10), and the items are keyed to one another with slots and splines (*id.* at 7:50–51).

Sprocket hub 109 is disposed within and concentric with sprocket 112 (*see id.* at Fig. 10), and the items are keyed together with slots and splines (*id.* at 7:51–53). We find that Jones’s Figure 9 shows drive shaft 105 on the same side of clutch 107 as sprocket 112 and that drive shaft 105 is disposed within sprocket 112. *See id.* at Fig. 9. We find that Jones’s Figure 10 indicates that any shaft that is disposed within and passes through sprocket 112 on its way to clutch 107 would necessarily be disposed within, and concentric with, axial hub 108. *See id.* at Fig. 10. Accordingly, we find that Jones’s drive shaft 105, which we have identified as an output shaft, is necessarily disposed within and concentric with axial hub 108, which is included in item 107 and which we have identified as an input shaft. Accordingly, we determine that Petitioner has shown that claim 14 is obvious over Wu, Watson, and Jones.

h. Claims 15, 16, 18, and 19

Claims 15, 16, 18, and 19 depend from claim 14 and further recite similar language and requirements as other dependent claims that we have already reviewed. The claim recitations correspond as follows: claim 15 corresponds to claim 10, claim 16 corresponds to claim 2, claim 18 corresponds to claim 4, and claim 19 corresponds to claims 7 and 8. *Compare* Ex. 1001, 9:33–38, 10:1–9, *with id.* at 8:37–39, 8:43–45, 8:56–60. We find that Petitioner has established that the combination of Wu, Watson, and Jones discloses each of the limitations, for similar reasons as set forth for claims 2, 4, 7, 8, and 10, and that a person of ordinary skill would have

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sought to combine the teachings of Wu, Watson, and Jones for similar reasons. *See supra*, §§ II.C.3.b., II.C.3.c., II.E.2.a., II.E.2.b. Accordingly, we determine that Petitioner has shown that claims 15, 16, 18, and 19 are obvious over Wu, Watson, and Jones.

i. Claim 17

Claim 17 depends from claim 16 and further recites “wherein the biasing member is in communication with a sprocket that supports a portion of the cable.” Ex. 9:39–41. Petitioner asserts that the recitation of claim 17 corresponds to that of claim 3, which recites “wherein the biasing member is in communication with a sprocket, and the cable extends through the sprocket.” Pet. 50 & n.1. Nevertheless, claim 17 contains a feature that we have not yet analyzed, i.e., that the sprocket supports the cable. Relying on Mr. Rawls’s testimony, Petitioner asserts that a person of ordinary skill would understand that a cable that extends through a sprocket is supported by the sprocket. *See* Pet. 50 n.1 (citing Ex. 1008 ¶ 314). We credit Mr. Rawls’s testimony that Jones’s chain 120 would be understood to exert a force on sprocket 121 as consistent with the evidence of record. *See* Ex. 1005, 7:61–8:1; Ex. 1008 ¶ 314. Accordingly, we determine that Petitioner has shown that claim 17 is obvious over Wu, Watson, and Jones.

j. Claim 20

Claim 20 is an independent claim that includes features of independent claims 1 and 14 and dependent claims 13, 15, 16, 18, and 19, and Petitioner relies on the cumulative evidence already presented. *Compare* Ex. 1001, 1010–40, *with id.* at 9:4–7, 9:33–38, 10:1–9; *see* Pet. 50–51. We determine that Wu, Watson, and Jones discloses the individual limitations for the same reasons as already discussed above. Further, we

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determine that a person of ordinary skill would have sought to combine the teachings for the same reasons set forth above. Accordingly, we determine that Petitioner has shown that claim 20 is obvious over Wu, Watson, and Jones.

F. Obviousness of Claims 1–4 and 10 over Zhou and Jones

Petitioner contends that claims 1–4 and 10 are unpatentable as obvious over Zhou and Jones. Pet. 22–24, 51–65.

1. Overview of Zhou

Zhou is titled “Ergometer for Ski Training” and relates to exercise machines, and more particularly, to a ski training apparatus that provides equal resistance to either one of a user’s arms when moved individually or to both arms moving in unison. Ex. 1006, [54], 1:13–17. According to Zhou, “[n]o matter which handle is pulled and without regard to the order in which

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the handles are pulled, there is always a smooth resistance force applied to the handle.” *Id.* at 8:44–47. Figure 2 of Zhou is depicted below:

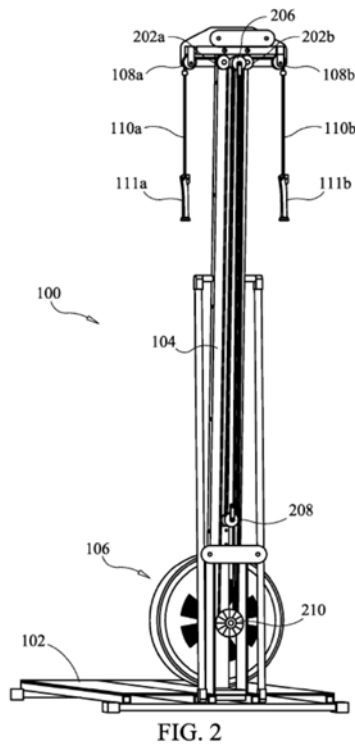


Figure 2 of Zhou is an “elevation rear view of a ski-movement-simulation ergometer assembly” *Id.* at 4:65–67.

First and second handles 111a and 111b, when gripped by a user, can be used in an individual manner to cause movement of first and second cables 110a and 110b, which in turn, causes the resistance-producing assembly 106 to apply resistance. *Id.* at 6:55–61. The resistance producing assembly can utilize air, magnets, friction, water, oil, pistons, hydraulics, and other means. *Id.* at 9:56–10:22, 11:21–23.

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2. Analysis

a. Independent claim 1

i. preamble, “a base member,” and “a tower structure coupled to the base member”

Petitioner asserts, *inter alia*, that Zhou discloses a strength training apparatus with a base and a tower coupled thereto. Pet. 51–53 (citing, e.g., Ex. 1006, Title, Abstract, 6:38–40, 6:54, 11:14–19, Fig. 1; Ex. 1008 ¶¶ 336–338). We find that Zhou discloses these limitations. In particular, Zhou discloses platform 102 and vertical member 104, as part of a machine that generates resistance. Ex. 1006, Abstract, 6:34–50.

ii. “at least one arm coupled to the tower structure,” “a pulley being coupled to at least one arm,” “a cable extending through the pulley,” and “a handle coupled to a first end of the cable”

Petitioner asserts, *inter alia*, that Zhou discloses an arm coupled to the tower, a pulley coupled to the arm, a cable extending through the pulley, and a handle coupled to the cable. Pet. 52–53 (citing, e.g., Ex. 1006, 3:28–34, 3:46–49, Figs. 2, 3, 5, 7, 9, 11, 18–23, 31, 32; Ex. 1008 ¶¶ 341–343). We find that Zhou discloses these limitations. In particular, Zhou discloses first and second arms slideably coupled to the vertical member, with first and second cable portions connected to first and second pulleys, which are connected to the first and second arms. *See* Ex. 1006, 3:22–45. The first and second cables are also connected to ski-pole handles. *Id.* at 3:46–49.

iii. “a flywheel connected to the tower structure”

Petitioner asserts, *inter alia*, that Zhou discloses a flywheel connected to the vertical structure. Pet. 54–55 (citing, e.g., Ex. 1006, 7:4–6, 11:1, 5:13–15, 5:24, 5:29–32, 9:7–17, 11:1, 11:19–23, Fig. 2, 31; Ex. 1008 ¶ 344). We find that Zhou discloses the recited flywheel. In particular, Zhou

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discloses resistance-producing assembly 106, which includes a flywheel 1301, connected to vertical member 104. Ex. 1006, 7:4–6, 9:7–17.

iv. “a magnetic braking mechanism that resists movement of the flywheel” and “a console in communication with the magnetic braking mechanism”

Petitioner asserts, *inter alia*, that Zhou discloses a magnetic braking system and a console in communication therewith. Pet. 54–56 (citing, e.g., Ex. 1006, 14:29–31, 14:33–36, Figs. 22, 31; Ex. 1008 ¶¶ 345–346). We find that Zhou discloses these limitations. In particular, Zhou discloses that resistance-producing assembly 106 can utilize magnets. Ex. 1006, 11:19–23. Zhou discloses a device for measuring and displaying the work performed on the inventive assembly and that work measurement device 3100 receives feedback from resistance-producing assembly 106. *Id.* at 14:29–31, 14:33–36.

v. “wherein the displacement of the handle results in rotation of the flywheel”

Petitioner asserts, *inter alia*, that Zhou’s device possesses the functionality recited in the “wherein” clause. Pet. 56 (citing, e.g., Ex. 1006, 10:54–11:2, 12:17–51, Fig. 22; Ex. 1008 ¶ 347). We find that Zhou discloses the recited rotation. In particular, Zhou discloses that when user pulls both cables 110a, 110b down, this causes flywheel 1301 to spin. Ex. 1006, 10:67–11:2.

vi. Summary

For the preceding reasons, we determine that Petitioner has established that Zhou and Jones render obvious independent claim 1. In this connection, Jones is not essential to the asserted ground of unpatentability with respect to independent claim 1.

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b. claims 2 and 10

Petitioner relies on Jones for the limitations of claims 2 and 10 (*see* Pet. 58, 64), which we find to satisfy this limitation. *See supra* § II.C.b.

Petitioner argues that a person of ordinary skill would have implemented Jones’s configuration inside of Zhou to allow extension of cables through a longer structure, to provide a simpler and more reliable design than a coiling apparatus, and to prevent mechanical failure. Pet. 61, 65 (citing Ex. 1008 ¶¶ 356–357). We are persuaded that a person of ordinary skill would have sought to implement a biasing member, as taught by Jones, in Zhou’s device in order to allow extension of a cable in a compact machine and to prevent mechanical failure. *See* Ex. 1008 ¶¶ 163 (“Implementing this configuration would allow a user to be able to pull a long length of cable during exercise while requiring only half of the travel distance from the biasing member”), 356–357. Accordingly, we determine that Petitioner has shown that claims 2 and 10 are obvious over Zhou and Jones.

c. claims 3 and 4

As with the ground of unpatentability based on Wu and Jones, Petitioner similarly relies on Jones for the additional recitations of claims 3 and 4 in the ground of unpatentability based on Zhou and Jones, i.e., the “sprocket” limitations, which we have found to be satisfied by Jones. *See* § II.C.3.c. Petitioner asserts that a person of ordinary skill would have combined the teachings of Jones and Zhou to optimize the ratio between the length pulled by the user and the travel distance of the biasing member. Pet. 24 (citing Ex. 1008 ¶ 169). We are persuaded that Petitioner has shown that a person of ordinary skill in the art would have sought to modify Zhou’s

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device with Jones's teachings in order to use a compact form factor. *See* Ex. 1008 ¶¶ 161–162, 168–169. Accordingly, we determine that Petitioner has shown that claims 3 and 4 are obvious over Zhou and Jones.

G. Obviousness of Claims 5 and 6 Over Zhou and Webb

Petitioner contends that claims 5 and 6 are unpatentable as obvious over Zhou and Webb. Pet. 65–67. As with the ground of unpatentability based on Wu and Webb, Petitioner similarly relies on Webb for the additional recitations of claims 5 and 6, i.e., the movable arms. We have already reviewed this evidence above, and found that Webb discloses these limitations. *See* § II.D.2. Petitioner asserts that a person of ordinary skill would have combined the teachings of Zhou and Webb to optimize the position of the cables. Pet. 22–23 (citing Ex. 1008 ¶ 67). We are persuaded that a person of ordinary skill in the art would have modified Zhou's device with the teachings of Webb regarding moveable arms to allow a user to optimize the position of the cables. *See* Ex. 1008 ¶ 67. Accordingly, we determine that Petitioner has shown that claims 5 and 6 are obvious over Zhou and Webb.

H. Obviousness of Claims 7–9 and 11–20 Over Zhou, Loach, and Jones

Petitioner contends that claims 7–9 and 11–20 are unpatentable as obvious over Zhou, Loach, and Jones. Pet. 23–24, 67–75.

1. Overview of Loach

Loach is titled “Exercise Machine” and relates to exercise machines for performing short duration resistance exercises as well as aerobic endurance exercises. Ex. 1007, [54], 1:1–4. Loach further addresses the

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need for exercise equipment that can be easily transported and stowed in small spaces. *Id.* at 1:4–6. Figure 1 of Loach is depicted below:

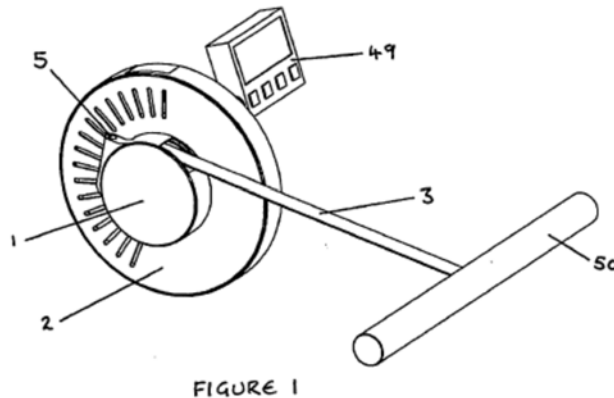


Figure 1 of Loach illustrates an exercise machine incorporating a resistance unit according to the invention. *Id.* at 8:2–3.

Drum unit 1 contains a coil of cable 3. *Id.* at 8:24. The drum unit may be fixed to brake unit 2 such that drum 6 (not shown) may rotate while the housing of the drum unit is fixed. *Id.* at 8:24–26. Handle 3 may be fitted to the end of the cable. *Id.* at 8:26.

2. Analysis

a. claim 7

Claim 7 depends from claim 1 and further recites “a torque sensor proximate the flywheel.” Ex. 1001, 8:52–53. Petitioner asserts that Zhou and Loach disclose the “torque sensor” limitation of claim 7 as follows:

A POSITA would thus understand that Zhou would include a torque sensor proximate the flywheel. Rawls ¶ 365. Loach, further, discloses a compatible magnetic rotating member with a torque sensing device (Ex. 1007 at 4, 12, Fig. 9) that provides torque data T, to its electronics. *Id.* at 15. Given both are exercise machines with rotating members that measure energy, adding Loach’s torque sensor to Zhou is a known and

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obvious enhancement that provides predictable results. *See* Rawls ¶¶ 365–366.

Pet. 67–68. We determine that Petitioner has not provided sufficient evidence that Zhou discloses a torque sensor. Further, we determine that Petitioner has not adequately explained the nature of the proposed combination of Zhou, Loach, and Jones. *See* 37 C.F.R. § 42.104(b)(3), (4). In other words, Petitioner has not explained with adequate specificity how the components are proposed to be combined to teach the invention of claim 7. *See* Pet. 67–68.

As such, we determine that Petitioner has not established that claim 7 would have been obvious over the combination of Zhou, Jones, and Loach.

b. claims 8, 9, and 11–20

For similar reasons as for dependent claim 7, we determine that Petitioner has not established that the remaining claims would have been obvious over the combination of Zhou, Jones, and Loach.

III. PATENT OWNER’S MOTION TO AMEND

Patent Owner’s motion to amend is contingent on a finding of unpatentability of claims 1 and 2 by the Board. Mot. Amend 1. Because we conclude that Petitioner has demonstrated that claims 1 and 2 are unpatentable (among other claims), we proceed to consider Patent Owner’s motion to substitute claims 21 and 22 for claims 1 and 2. For the reasons discussed below, Patent Owner’s motion to amend is denied. In particular, we determine that substitute claims 21 and 22 lack adequate written description support.

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A. Threshold Requirements

In an *inter partes* review, claims may be added as part of a proposed motion to amend. 35 U.S.C. § 316(d).

The parties dispute the allocation of burdens, with Patent Owner arguing that Petitioner bears the burden of proving unpatentability and a lack of written description, as it would for indefiniteness. *See* Mot. Amend 1–2 (citing *Bosch Automotive Service Solutions, LLC v. Matal*, 878 F.3d 1027 (Fed. Cir. 2017)).

The Board must assess the patentability of the proposed substitute claims “without placing the burden of persuasion on the patent owner.” *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1328 (Fed. Cir. 2017) (en banc). Patent Owner’s proposed substitute claims, however, must still meet the statutory requirements of 35 U.S.C. § 316(d) and the procedural requirements of 37 C.F.R. § 42.121 as a threshold matter. *See* “Guidance on Motions to Amend in view of *Aqua Products*” (2017), available at https://www.uspto.gov/sites/default/files/documents/guidance_on_motions_to_amend_11_2017.pdf. Accordingly, Patent Owner must demonstrate: (1) the amendment proposes a reasonable number of substitute claims; (2) the amendment does not seek to enlarge the scope of the claims of the patent or introduce new subject matter; (3) the amendment responds to a ground of unpatentability involved in the trial; and (4) the original disclosure sets forth written description support for each proposed claim. *See* 35 U.S.C.

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§ 316(d)(1)(B),(3); 37 C.F.R. § 42.121; *Hospira, Inc. v. Genentech, Inc.*,
Case IPR2017-00737, slip op. at 47 (PTAB Oct. 3, 2018) (Paper 108).¹⁶

B. Proposed Substitute Claims 21 and 22

Proposed substitute claims 21 and 22 are reproduced below with markings showing proposed changes from claims 1 and 2, respectively. Deletions are shown in brackets and additions are underlined.¹⁷

Claim 21 (substitute for original claim 1): A strength training apparatus, comprising:

- a base member;
- a tower structure coupled to the base member;
- at least one arm coupled to the tower structure;
- a pulley being coupled to the at least one arm;
- a cable extending through the pulley;
- a handle coupled to a first end of the cable;
- a flywheel connected to the tower structure;
- a magnetic braking mechanism that resists movement of the flywheel by applying a level of resistance to rotation of the flywheel, the magnetic braking mechanism including an arm having multiple magnets that are arranged to provide a magnetic flux through which the flywheel rotates, the arm configured to pivot, relative to the flywheel, to alter the level of resistance applied to rotation of the flywheel; [and]

- a console in communication with the magnetic braking mechanism, the console configured to calculate an amount of power expended by a user pulling on the handle during a workout

¹⁶ In our view, the allocation of the burden on this issue is not outcome determinative on the facts of this case, for the reasons discussed in more detail in Section III.D.3., *infra*.

¹⁷ Notwithstanding that Patent Owner has submitted claims numbered 21 and 22 as proposed claims in each of cases IPR2017-01407 and -1408 as substitutes for claims 1 and 2, Patent Owner indicates, and Petitioner agrees, that the sets of proposed substitute claims are not being submitted in the alternative to each other and that Patent Owner is potentially seeking to add four claims to the '276 patent. *See* Tr. 55:1–6, 77:4–5.

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routine, the console further including a dial and a display, the dial configured to allow the user to select the level of resistance applied to rotation of the flywheel by the magnetic braking mechanism, the display configured to provide an indication of the selected level of resistance, the display further configured to provide an indication of the calculated amount of power expended by the user, the console further configured to communicate via radio with a portable computing device;

an application program configured to be loaded on the portable computing device, the application program configured to:

receive and store a physical fitness goal that may be achieved using the strength training apparatus, the stored physical fitness goal inputted by the user via an interface provided by the portable computing device;

track progress of the user toward completing the stored physical fitness goal;

indicate to the user the progress of the user toward completing the stored physical fitness goal;

determine whether the user has achieved the stored physical fitness goal;

indicate to the user that the user has achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved;

display a customized workout routine for the user to perform with the strength training apparatus, the customized workout routine providing instructions to the user relating to the customized workout routine;

display videos on the portable computing device that demonstrate how to use the strength training apparatus;

display text on the portable computing device that instructs how to use the strength training apparatus; and

store information regarding past workout routines performed by the user on the strength training apparatus;

a second pulley rotatable about a second axis that is fixed relative to the tower structure;

a third pulley rotatable about a third axis that is displaceable relative to the tower structure; and

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a drive cable coupled to the cable and that extends through the second pulley and through the third pulley and that includes an end that is coupled to a fixed location with respect to the tower structure;

wherein displacement of the handle results in displacement of the cable, rotation of the pulley, displacement of the drive cable, rotation of the second pulley, rotation of the flywheel, rotation of the third pulley, and displacement of the third axis of the third pulley relative to the tower structure.

Claim 22 (substitute for original claim 2): The strength training apparatus of claim [1] 21, further including a biasing member, wherein:

the biasing member is coupled to the third pulley and includes an end that is coupled to a fixed location with respect to the tower structure;

the biasing member is configured to allow the third axis of the third pulley to be displaced vertically downward relative to the tower structure;

the biasing member is configured to pull the third axis of the third pulley to vertically return upward relative to the tower structure;

the drive cable is configured such that the user pulling on the handle causes the drive cable to drive the flywheel to rotate and causes the drive cable to vertically displace the third axis of the third pulley downward relative to the tower structure; and the biasing member is configured such that the user releasing the handle, after pulling thereon, pulls the third axis of the third pulley to vertically return upward relative to the tower structure and pulls on the drive cable which [that] returns the handle without causing rotation of the flywheel.

Mot. Amend 5–20; Ex. 2002, 1–4.

C. Claim Construction

We construe only those terms that are in controversy, and only to the extent necessary to resolve the controversy. *See Vivid Techs., Inc. v. Am.*

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Sci. & Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999). We determine that no terms require special construction.

D. New Matter/Written Description

The parties dispute whether there is written description support for the following aspects of claim 21: (1) configuration with three pulleys, one of which is displaceable, and a drive cable and (2) “radio communication.”

1. The Law of Written Description

The written description requirement is contained in 35 U.S.C. § 112 ¶ 1, and reflects the prohibition of 35 U.S.C. § 132 against adding new matter to the claims. The test for sufficiency of written description is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date. *Ariad Pharmaceuticals, Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc). Adequacy of written description is a question of fact. *Id.* (citing *Ralston Purina Co. v. Far-Mar-Co, Inc.*, 772 F.2d 1570, 1575 (Fed. Cir. 1985)).

Compliance with the written description requirement will necessarily vary depending on the context, including the nature and scope of the claims, the complexity and predictability of the relevant technology, the existing knowledge in the particular field, the extent and content of the prior art, the maturity of the science or technology, and the predictability of the aspect at issue. *Id.* (citing *Capon v. Eshhar*, 418 F.3d 1349, 1357–59 (Fed. Cir. 2005)). While the written description requirement does not demand any particular form of disclosure, or that the specification recite the claimed invention *in haec verba*, a description that merely renders the invention obvious does not satisfy the requirement. *Id.* at 1352 (citations omitted).

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2. configuration with three pulleys, one of which is displaceable, and a drive cable

Claim 21 recites in pertinent part: “a pulley being coupled to the at least one arm,” “a second pulley rotatable about a second axis that is fixed relative to the tower structure,” and “a third pulley rotatable about a third axis that is displaceable relative to the tower structure.” Mot. Amend 6, 15–16.

The ’088 Application provides:

A drive chain 150 (or drive belt or cable or other appropriate structure) has a first end 152 that is coupled to the cables 116A and 116B that extend through pulleys 114A and 114B and either extend through, or adjacent to, the arms 108A and 108B. The drive chain 150 extends through several pulleys or sprockets including, for example, a first sprocket 154, the input shaft 144 (or an associated pulley or sprocket coupled therewith) and a second sprocket 156.

Ex. 1009 ¶ 53; *see also* Ex. 2003 ¶ 53 (’007 Provisional Application); Ex. 2005 ¶ 53 (’793 Application).

Patent Owner asserts that the ’088 Application describes elements 114A and 154, which are first and second pulleys. *See* Mot. Amend 6, 15 (citing, e.g., Ex. 1009 ¶¶ 45, 53, Fig. 1). Patent Owner asserts that the ’088 Application describes element 156, which it asserts is a sprocket or pulley (a third pulley) and is connected to drive chain 150 and is displaceable. *See* Mot. Amend 16–17 (citing, e.g., Ex. 1009 ¶ 53, Fig. 4A).

Petitioner argues that the specification only describes a specific configuration and that Patent Owner was only in possession of this configuration. Motion Surreply 3. Petitioner argues that the specification refers to items 154 and 156 as sprockets, i.e., “first sprocket 154” and “second sprocket 156,” and argues that the Board’s claim construction

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distinguishes between sprockets and pulleys. Opp. 7. Both of these assertions are accurate, i.e., the second sentence of paragraph 53 (quoted above) refers to items 154 and items 156 as “sprocket[s],” and the uncontested claim construction distinguishes between sprockets and pulleys. Ex. 1009 ¶ 53; *see supra* § II.A.1. Patent Owner, however, argues that the use of a sprocket in these positions is illustrative or exemplary, that the same sentence of the specification describes that either sprockets and pulleys can be used, that the previous sentence of the Specification indicates that drive chain 150 (used with a sprocket) can be replaced with a drive cable (i.e., for use with a pulley), and that a person of ordinary skill in the art would have understood from this description that item 156 can be either a sprocket or a pulley. *See* Motion Reply 3–4 (citing, e.g., Ex. 1001, 5:17–14; Ex. 2013, 60:13–62:20). Patent Owner also asserts that Petitioner’s own expert (Mr. Cox) admits that the illustrations of sprocket 154 and sprocket 156 in FIG. 4A look like pulleys. Motion Reply 4 (citing Ex. 2013, 66:23–67:12).

As to Petitioner’s argument regarding the specification’s identification of items 154 and 156 as “first sprocket 154” and “second sprocket 156,” we agree with Patent Owner that the Specification uses introductory language to mark this as an example, i.e., “for example.” Ex. 1009 ¶ 53. Further, the specification’s use of “including” marks this as a non-exclusive example. *See id.*

We are persuaded by Patent Owner that the specification of the ’088 Application contemplates, and describes, that either sprockets or pulleys may be used and that a person of ordinary skill would have understood that this would be the case for any of the three positions. Although there are a number of permutations involved, it would be burdensome for an applicant

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for a patent to have to describe each permutation. “[A] sufficient description of a genus instead requires the disclosure of either a representative number of species falling within the scope of the genus or structural features common to the members of the genus so that one of skill in the art can ‘visualize or recognize’ the members of the genus.” *Ariad Pharmaceuticals, Inc.*, 598 F.3d at 1350 (citing *Regents of the University of California v. Eli Lilly & Co.*, 119 F.3d 1559, 1568 (Fed. Cir. 1997)). This is not a case in which a patentee has defined a genus functionally nor is this a case where a patentee is attempting to capture a genus of millions of possibilities. Here, the specification describes the genus in structural terms, i.e., the use of pulleys or sprockets, at a limited number of positions, and describes that either may be used. Accordingly, we understand the description in the specification to be adequate written description to indicate to a person of ordinary skill that this type of substitution is acceptable and that the patentee was in possession of the invention at the time of the invention. The testimony of Mr. Ganaja is in accord. *See* Ex. 2011 ¶¶ 22–28.¹⁸

Accordingly, we determine that the ’088 Application provides adequate written description support for the claimed configuration of pulleys and drive cable, including the use of three pulleys (at items 114A, 154, and 156) and a drive cable. *See* Ex. 1009 ¶¶ 45, 53, Figs. 1, 4A.

¹⁸ Although we do not treat the concession of Mr. Cox (Ex. 2013, 66:23–67:12) as a party admission binding on Petitioner, we agree that Figure 4A is also in accord with the understanding that pulleys can be used at positions 154 and 156 (*see* Ex. 1009, Fig. 4A).

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3. *“the console further configured to communicate via radio with a portable computing device”*

Patent Owner asserts that when read in context, the disclosure of the ’088 Application as a whole would convey to a person of ordinary skill a console configured to communicate via radio, as recited. *See* Mot. Amend 10; Motion Reply 6. Patent Owner relies on the console of the ’088 Application and asserts that the Specification incorporates the teaching of radio communication in the ’361 Application¹⁹, as discussed in more detail below. The parties dispute the extent to which the ’088 Application incorporates the ’361 Application.

In particular, Patent Owner asserts that the claimed console corresponds to control panel 130 of the ’088 Application, that the ’088 Application discloses that the control panel may include connection for communication with other devices (Ex. 1009 ¶ 50), and that the ’088 Application incorporates the ’361 Application in its entirety. Mot. Amend 10 (citing, e.g., Ex. 1009 ¶ 50); Motion Reply 6. Patent Owner asserts that the ’361 Application provides that exercise apparatus 102 communicates with other devices, including client computing device 106, which includes a portable computing device. Motion Reply 8 (citing Ex. 2009 ¶¶ 47, 49; Ex. 2012 (Ferraro Decl.) ¶¶ 26–36). Patent Owner asserts that the ’361 Application provides that this communication occurs over a “radio communication link,” or “other methods.” *Id.* at 8–9 (citing Ex. 2009 ¶ 47).

Petitioner argues that the incorporation of the ’361 Application was insufficient because to properly incorporate a document by reference, the

¹⁹ U.S. Patent Application No. 13/754,361, filed Jan. 30, 2013 (Exs. 2009 and 2010 (drawings), “the ’361 Application”).

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host document “must identify with *detailed particularity* what specific material it incorporates and *clearly indicate* where that material is found in the various documents.” Opp. 10–12 (citing *Cook Biotech Inc. v. Acell, Inc.*, 460 F.3d 1365, 1376 (Fed. Cir. 2006); *Zenon Envtl., Inc. v. U.S. Filter Corp.*, 506 F.3d 1370, 1379 (Fed. Cir. 2007); *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1283 (Fed. Cir. 2000); *Wrigley Jr. Co. v. Cadbury Adams USA LLC*, 631 F. Supp. 2d 1010, 1031–32 (N.D. Ill. 2009)). Patent Owner argues that the use of the phrase “in its entirety” indicates full rather than partial incorporation of the ’361 Application. Ex. 2003 ¶ 62; Motion Reply 6–8 (citing *PAICE LLC v. Ford Motor Co.*, 881 F.3d 894 (Fed. Cir. 2018); *Harari v. Lee*, 656 F.3d 1331, 1335 (Fed. Cir. 2011); *Zenon Envtl., Inc.*, 506 F.3d at 1370; Ex. 2013, 76:4–6).

Whether and to what extent material has been incorporated by reference into a host document is a question of law. *Cook Biotech Inc. v. Acell, Inc.*, 460 F.3d 1365, 1376 (Fed. Cir. 2006). We agree with Petitioner that a proper incorporation is based on a clear indication of what is being incorporated, with due respect for the particularity voiced by the applicant. *See, e.g., Zenon Envtl., Inc.*, 506 F.3d at 1379. Nevertheless, we find that that standard is met here. The ’088 Application provides “One example of customizing a work-out that may be utilized in conjunction with the exercise apparatus described herein is set forth in U.S. Patent Application No. 13/754,361, filed on Jan. 30, 2013, the disclosure of which is incorporated by reference herein in its entirety.” Ex. 2003 ¶ 62. We find this to be clear language of incorporation. Although the ’088 Application states that a disclosure is incorporated “in its entirety,” it refers more specifically to one example of the ’361 Application which provides “customizing a work-out”

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that may be utilized in conjunction with the exercise apparatus of the '088 Application. *Id.* Further, as a matter of grammar, the antecedent of the “disclosure” being incorporated could be either the application or “one example” that is described in the application. We determine that this case more closely resembles the language at issue in *Zenon* where there was incorporation of material for a specific teaching than in *PAICE*, where there was no qualification as to the extent of the incorporation. *Compare Zenon*, 506 F.3d at 1379, *with PAICE*, 881 F.3d at 907. Accordingly, we determine that the example of “customizing a work-out” in conjunction with the exercise apparatus is expressly incorporated.²⁰

In the Detailed Description of the '361 Application, paragraph 46 provides an embodiment whereby a computer may be used with an exercise apparatus to generate a customized workout routine:

[A]n exercise apparatus may include a bar code, a Quick Response (QR) code, an Radio Frequency (RF) tag, etc. that includes information about the apparatus. The computing device may scan the encoded information affixed to the exercise apparatus, and based on the specified goals inputted by the user, the computing device may generate a customized workout routine for that particular exercise apparatus that will assist the user to accomplish his/her physical fitness goals

Ex. 2009 ¶ 46.

²⁰ We note that the '361 Application is titled “Systems and Methods to Generate a Customized Workout Routine.” Thus, regardless of whether the '361 Application is incorporated in its entirety, a significant portion of the '361 Application may be involved. Nevertheless, we focus on paragraphs 46, 47, and 49 of the '361 Application which specifically refer to one or more examples of customizing a workout routine with an exercise apparatus. Ex. 2009 ¶¶ 46, 47, 49.

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The paragraph that follows proceeds to provide in more detail, and with reference to Fig. 1, that “client computing device 106 may acquire the information from the apparatus 102.” *Id.* ¶ 47. The same paragraph then provides an embodiment with near field communication (NFC) capabilities, and concludes that:

As a result, using NFC standards, a radio communication link may be established between the apparatus 102 and the device 106. The client computing device 106 may acquire the information from the exercise apparatus 102 via the radio communication link. The apparatus 102 and the device 106 may exchange information via other methods in addition to bar codes, QR codes, and NFC technologies.

Id.

We determine that at least this portion of the '361 Application is incorporated by clear and particular reference in the '088 Application, i.e., as one example of customizing a workout, whereby a computer may scan the RF tag of an exercise apparatus and generate a customized workout routine for a given user on that apparatus. This falls within the '088 Application's particularized reference to the '361 Application for customizing a workout.

Petitioner disputes that the specification supports communication with a “portable computing device.” Opp. 6. However, Patent Owner argues that paragraphs 47 and 49 of the '361 Application clarify that computing device 106, described in paragraph 47 of the '361 Application, includes portable computing devices. Motion Reply 8; *see also* Mot. Amend 10. Patent Owner's Declarant observes that paragraph 49 of the '361 Application describes that the client computing device 106 may be a smartphone, a laptop, a tablet, or any other portable computing device. Ex. 2012 ¶ 33. We agree with Dr. Ferraro that paragraph 49 of the '361 Application discloses

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that in one embodiment computing device 106 may be a smartphone, laptop, tablet, or “any other portable computing device.” Ex. 2009 ¶ 49. Further, we determine that this portion of the ’361 Application is incorporated into the ’088 Application along with paragraphs 46 and 47 of the ’361 Application because it is an elaboration on the identity of computing device 106 disclosed in paragraph 47, which describes how to customize a workout.

Petitioner also argues that the disclosure of an RFID tag and an NFC link is insufficient support for the proposed claim language that recites the use of “radio” communication more broadly. Opp. 13; Motion Surreply 4–5 (citing *D Three Enterprises v. Sunmodo Corp.*, 890 F.3d 1050 (Fed. Cir. 2018)). We find that RF and NFC are representative of “radio” communication in this context, and the enumeration of more than one species here indicates it is appropriate to use radio more generally. Cf. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (discussing claim construction in the context of the law of 35 U.S.C. § 112).

Petitioner also argues that, even if incorporated, the disclosure fails to disclose that *the console* communicates by radio, as recited in substitute claim 21. Opp. 12–13. Petitioner argues that the disclosure of the ’361 Application does not locate the source of communication in the console. Opp. 13 (citing Ex. 1018 ¶¶ 54–57). We agree.

There is no disclosure in any place within the ’361 Application that it is *the console* that communicates by radio, and it is not necessarily the case that an RFID tag or bar code, as described in the ’361 Application would be located in a console. See, e.g., Ex. 2009 ¶ 46–49. Rather than using a console or control panel on the exercise device to actively control a portable computing device, the ’361 Application uses portable computing device 106

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to scan a tag or bar code on exercise device 102, where the exercise device is passively scanned so that the portable computing device can obtain data about the machine. *See also id.* ¶ 71 (passing data to the computing device). There is no disclosure that the portable computing device sends information to the exercise device to control that device, or that the user will necessarily perform the suggested workout. Although not argued, there may also be a separate monitoring apparatus 502 in the form of a camera or a magnetic strip attached to a dumbbell apparatus, or a gyroscope, that obtains information about whether the user has completed the workout. *Id.* ¶¶ 64, 77. However, it is not necessarily the case based on the disclosure of the '361 Application that the portable computing device communicates by radio with the console of the exercise device. Nor is there evidence that the NFC communication would necessarily include communication with the console of the exercise device. Rather, based on the context of the '361 Application, one would expect the NFC communication to perform a similar function as the RFID or barcode communication, i.e., by providing the portable computing device with information about the exercise apparatus. *See, e.g., id.* ¶¶ 46–49.

Patent Owner argues that the incorporated portions of the '361 Application would be read in context with paragraph 50 of the '088 Application which provides for the console to communicate with other devices. Motion Reply 8 (citing Ex. 1009 ¶ 50). Petitioner responds that Patent Owner is attempting to combine disparate teachings in a way that renders them obvious and does not qualify as possession of the invention for purposes of written description. *See* Motion Surreply 1–2. Although Patent Owner is correct that the console of the '088 Application communicates, this

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communication does not necessarily occur via radio. If anything, the disclosure that the control panel “may include connections” for communication with other devices indicates that this communication occurs through a physical connection. *See* Ex. 1009 ¶ 50 (“The control panel may further include connections for communication with other devices.”).

We agree with Petitioner that obviousness is not the standard for written description. *See Ariad*, 598 F.3d at 1352. Even assuming incorporation of the ’361 Application into the ’088 Application, we agree with Petitioner that the manner in which Patent Owner seeks to combine embodiments is in the nature of an obviousness analysis. Wireless communication was known, and wired connection capabilities were also known. *See* Ex. 1018 ¶ 15. However, it is not clear from the ’088 Application that *the console* is capable of wireless communication. If anything, the ’088 Application indicates that the console is configured for wired communication. By contrast, the type of wireless communication in the ’361 Application which Patent Owner relies on (e.g., paragraphs 46 and 47) is passive communication identifying an exercise machine’s type, and is disclosed as analogous to a bar code or RFID tag being scanned. Although it might have been obvious to combine teachings to locate wireless communication at the console, i.e., to allow the portable computer to control the exercise machine or provide direct feedback, there is no such teaching present. And obviousness is not the nature of the inquiry.

For these reasons, we do not find adequate written description support for claim 21, or for its dependent claim 22.

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E. Petitioner’s Argument that Amendments Are Not Responsive

Petitioner argues that the proposed amendments are not “responsive” to the grounds asserted in the Petition, as required by 37 C.F.R.

§ 42.121(a)(2), because the amendment is based on another strategy. *See* Opp. 13, 15 (citing *Idle Free Sys., Inc. v. Bergstrom*, IPR2012-00027, slip op. at 5 (PTAB June 11, 2013) (Paper 26)). Petitioner argues that this rule must encompass something other than the prohibitions against new matter and broadening of the claims so as not to be superfluous. Opp. 14 (citing *TRW Inc. v. Andrews*, 534 U.S. 19, 31 (2001)).

Although Petitioner argues that the issue of responsiveness is a matter of first impression (*see* Opp. 13–14), the Board has previously interpreted 37 C.F.R. § 42.121(a)(2). For example, the Board has previously observed that a patent owner, in addressing grounds based on § 102 or § 103, may at the same time include additional limitations to address potential issues under § 101 and § 112. *Veeam Software Corp. v. Veritas Techs., LLC*, Case IPR2014-00090, 2017 WL 3034509, slip op. 28–29 (PTAB July 17, 2017) (Paper 48). The Board reviews the entirety of the record to determine whether a patent owner’s amendments respond to a ground of unpatentability in the trial. *Apple Inc. v. Valencell, Inc.*, Case IPR2017-00321, 2018 WL 2734878, slip op. at 50 (PTAB June 5, 2018) (Paper 44) (citing *Western Digital Corp. v. SPEX Tech., Inc.*, Case IPR 2018-00082, slip op. at 5–7 (PTAB Apr. 25, 2018) (Paper 13) (informative)). The determining feature may not be removed and replaced. *Epicor Software Corp. v. Protegrity Corp.*, Case CBM2016-00006, 2016 WL 1566568, slip op. at 44 (PTAB Apr. 18, 2016) (Paper 54).

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Applying these principles here, we determine first that the recitation of a third pulley that is displaceable in proposed claims 21 and 22 is responsive to the grounds asserted in the Petition that are based upon known configurations of exercise machines using pulleys and sprockets. *See* Mot. Amend 16–17 (“a third pulley rotatable about a third axis that is displaceable relative to the tower structure; . . . wherein displacement of the handle results in displacement of the cable, rotation of the pulley, displacement of the drive cable, rotation of the second pulley, rotation of the flywheel, rotation of the third pulley, and displacement of the third axis of the third pulley relative to the tower structure.”); *see also id.* at 17–20 (reciting, e.g., features of motion of third pulley). Second, we determine that the further detail in proposed claim 21 for the magnetic braking mechanism is responsive to the grounds asserted in the Petition based on a magnetic braking mechanism. *See id.* at 7–8 (“a magnetic braking mechanism that resists movement of the flywheel by applying a level of resistance to rotation of the flywheel, the magnetic braking mechanism including an arm having multiple magnets that are arranged to provide a magnetic flux through which the flywheel rotates, the arm configured to pivot, relative to the flywheel, to alter the level of resistance applied to rotation of the flywheel”). Third, we determine that the recitations relating to variable resistance and power output are closely tied to the use of the magnetic braking mechanism and the function of such in the recited exercise machine, particularly, where as here, the exercise machine relates to strength training in a machine with both aerobic and anaerobic capacity. *See id.* at 9–10 (“a console in communication with the magnetic braking mechanism, the console configured to calculate an amount of power expended by a user pulling on

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the handle during a workout routine, the console further including a dial and a display, the dial configured to allow the user to select the level of resistance applied to rotation of the flywheel by the magnetic braking mechanism, the display configured to provide an indication of the selected level of resistance, the display further configured to provide an indication of the calculated amount of power expended by the user, the console further configured to communicate via radio with a portable computing device;”);
see also Ex. 1001, [54], 1:15–18, 1:56–63.

This is not a situation where a patentee is attempting to remove one feature and substitute another feature. *Epicor Software Corp.*, Case CBM2016-00006, slip op. at 44. We determine that, in the context of the record in its entirety, the proposed amendments provide responsive additions and are allowed to concomitantly provide further detail for purposes of compliance with 35 U.S.C. § 112. *Western Digital Corp.*, Case IPR 2018-00082, slip op. at 5–7; *Veeam Software Corp.* Case IPR2014-00090, slip op. 28–29.

F. Unpatentability

Petitioner asserts that proposed substitute claims 21 and 22 are unpatentable as obvious over the combination of Wu, Sawicky²¹, Watt, Dalebout, and Hope and over the combination of Zhou, Sawicky, Lull, Pyles, and Riley. Opp. 23–35; see also Mot. Surreply 6–12. To support its Opposition, Petitioner proffers the declaration of Mr. Cox. Ex. 1018. Patent Owner disagrees. Motion Reply 6–12. To support its Motion Reply, Patent

²¹ U.S. Patent No. 5,042,798, iss. Aug. 27, 1991 (Ex. 1011, “Sawicky”).

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Owner proffers the declarations of Mr. Ganaja (Ex. 2011) and Mr. Ferraro (Ex. 2012).

1. Claims 21 and 22 as Obvious Over Wu, Sawicky, Watt, Dalebout, and Hope

a. Watt (Ex. 1012)

Watt is titled “Exercise Bike” and relates to exercise equipment, and more particularly to stationary exercise bikes. Ex. 1012, [54], 1:14–15. According to Watt, certain prior art bicycles replaced the standard bicycle front wheel with a heavy flywheel and made use of a direct drive transmission but provided minimal information to the user regarding “pedal cadence, power, heart rate and so on.” *See id.* at 1:35–46. According to Watt, there was a need for this type of information because these bikes are often used in group riding programs at health clubs or training programs that focus on the transitions between different types of riding, e.g., high or low revolutions per minute, changing the resistance of the flywheel, standing up to pedal or leaning forward, and riding within targeted heart rate or power ranges. *Id.* at 1:47–56.

Watt discloses an exercise bike that may include a frame, a drive train, a flywheel, a braking system, and a power sensor. *Id.* at 2:2–4. The drive train may be operatively associated with the frame. *Id.* at 2:4–5. The flywheel may be operatively associated with the drive train. *Id.* at 2:5–6. The braking system may be operatively associated with flywheel. *Id.* at 2:6–7. The power sensor may be operatively associated the braking system. *Id.* at 2:6–7. The power sensor may include an accelerometer that measures a position of the braking system relative to a predetermined reference point. *Id.* at 2:8–10.

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b. Dalebout (Ex. 1014)

Dalebout is titled “Elliptical, Exercise Machine With Integrated Anaerobic Exercise System” and relates to exercise equipment and, more specifically, to exercise devices that provide aerobic and anaerobic activities. Ex. 1014, [54], 1:7–10. According to Dalebout, prior art exercise machines were generally configured for only one of anaerobic exercises and aerobic exercises, but not for both. *Id.* at 1:38–40. Dalebout discloses systems, apparatuses, and methods that enable a user to optionally perform both aerobic and anaerobic activity. *See id.* at 1:63–67. Dalebout describes a device that allows a user to move an exercise machine into a contracted position, an expanded position, or a combination therebetween. *See id.* at 1:66–2:1. When the telescoping frame is expanded, a user can conveniently

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engage in elliptical exercises, and when the telescoping frame is contracted, a user can conveniently engage in strength training exercises. *Id.* at 2:6–10.

Figure 7 of Dalebout is reproduced below (*see id.* at 3:4–7):

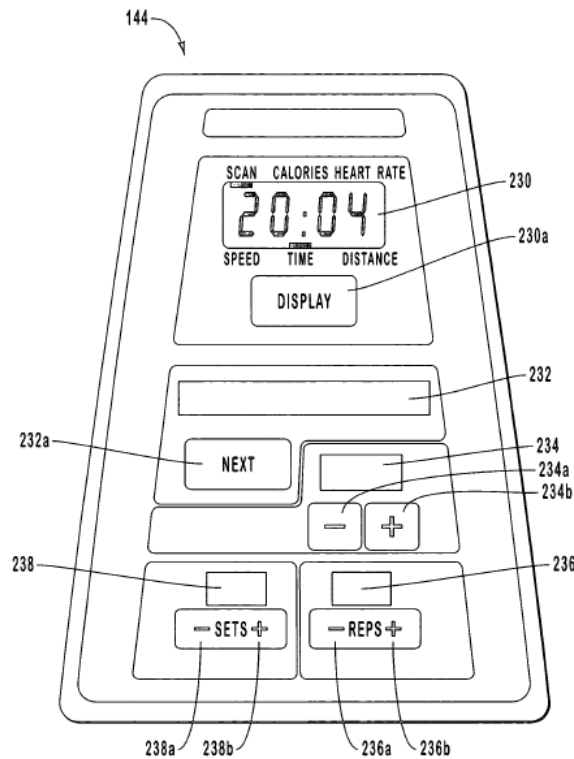


Fig. 7

Fig. 7 is front view of an electronic console of the exercise system for managing anaerobic and aerobic exercise information in accordance with an implementation of [Dalebout's] invention.

Dalebout discloses electronic console 144 with an input interface that allows a user to select a level of anaerobic resistance. *Id.* at 11:1–3. Electronic console 144 can be configured to have input and output displays. *Id.* at 11:16–17. For example, with respect to aerobic exercise data, electronic console 144 comprises counter interface 230 that displays incremental factual data such as calories burned, heart rate, speed of exercise time of exercise, and distance traveled. *Id.* at 11:17–22.

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c. Hope (Ex. 1016)

Hope is titled “Fitness Monitoring Methods, Systems, and Program Products, and Applications Thereof” and relates to program products, methods, and systems for providing fitness monitoring. Ex. 1016, [54], ¶ 1. According to Hope, prior art systems were capable of transferring performance of a workout to a computer for further analysis, and there was a need for improved program products, methods, and systems for providing fitness monitoring that would allow athletes to, among other things, better use data generated from past performances to gauge their improvement, to schedule activities and set goals for the future, to share their performance data with others, to stay motivated, and/or to enable them to exercise at intensities appropriate for their current fitness level and goals. *Id.* ¶¶ 4–5.

In one embodiment, a monitoring device may measure various performance parameters associated with the athlete’s physical activity and provide feedback to the athlete during the activity. *Id.* ¶ 59.

d. Analysis

In its Opposition, Petitioner sets forth its contentions as to how Wu, Sawicky, Watt, Dalebout, and Hope disclose each limitation of claim 21 and why it would have been obvious for a person of ordinary skill to have combined the teachings of the prior art. Opp. 23–31. Patent Owner disputes these contentions, and in particular disputes that the prior art relied on by Petitioner discloses the following limitations: “a console in communication with the magnetic braking mechanism, the console configured to calculate an amount of power expended by a user pulling on the handle during a workout routine, the console further including a dial and a display, the dial configured to allow the user to select the level of resistance applied to

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rotation of the flywheel by the magnetic braking mechanism, the display configured to provide an indication of the selected level of resistance, the display further configured to provide an indication of the calculated amount of power expended by the user” and “magnetic braking mechanism including an arm configured to pivot relative to the flywheel.” *See* Motion Reply 11–21.

- i. *“the console further including a dial and a display, the dial configured to allow the user to select the level of resistance applied to rotation of the flywheel by the magnetic braking mechanism, the display configured to provide an indication of the selected level of resistance, the display further configured to provide an indication of the calculated amount of power expended by the user”*

Petitioner asserts that the use of consoles including those with input such as dials, buttons, and touch screens, and output such as displays, in exercise equipment with flywheels was “well known.” Opp. 25 (citing Ex. 1018 (Cox Decl.) ¶¶ 24–35, 104; Ex. 1008 (Rawls Decl.) ¶¶ 56–57); *see also* Motion Surreply 6–7 (citing Ex. 1018 ¶¶ 24–35, 104–105, 125–126; Ex. 1008 ¶¶ 56–71), 8 (citing Ex. 1008 ¶¶ 56–71, 141, 243, 368; Ex. 1018 ¶¶ 28, 43, 105, 125–126²²). Petitioner states: “Given the well-established nature of these features on exercise machines of all types, using a dial on a console to select a resistance level and having the console display that level and power was obvious.” Motion Surreply 7. Petitioner indicates that this would have been a combination of known elements, in intended uses, and for predictable results. *See id.* Petitioner also asserts that Dalebout discloses that a user can select a level of aerobic resistance at an input interface of a console, and in

²² We understand Petitioner’s citation “125–16” on page 8 of the Motion Surreply to refer to the range 125–126 because Ex. 1018 has 139 paragraphs and does not have a paragraph 216.

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particular Dalebout's console 144 has resistance interface 234 with selectable decrement button 234a and increment button 234b to allow input. *See id.* (citing Ex. 1014, 11:1–3, 11:38–45; Ex. 1008, 56–71).

Petitioner also asserts that Loach discloses a user interface “consisting of a display and a number of buttons, switches, and/or dials” and would “allow the user to select the level of resistance provided by the machine.” Motion Surreply 8 (citing Ex. 1007, 3). Petitioner also asserts that Riley discloses the use of a “rotary dial” as an input on a computing device—of which a console is an example. *Id.* (citing Ex. 1017, 13:21–25).

Petitioner asserts that output such as displays in exercise equipment with flywheels was “well known.” Opp. 25 (citing Ex. 1018 ¶¶ 24–35, 104–105; Ex. 1008 ¶¶ 56–71); *see also* Motion Surreply 6–7 (citing Ex. 1018 ¶¶ 24–35; Ex. 1008 (Rawls Decl.) ¶¶ 56–71), 8 (citing Ex. 1008 ¶¶ 56–71, 141, 243, 368). Petitioner states that “Given the well-established nature of these features on exercise machines of all types, using a dial on a console to select a resistance level and having the console display that level and power was obvious.” Motion Surreply 7 (citing Ex. 1018 ¶¶ 24–29, 104–105, 125–126); *see also id.* at 8 (citing Ex. 1018 ¶¶ 28, 43, 105, 125–126²³). Petitioner indicates that these were known elements, intended ways, and predictable results. *See id.* at 7.

Mr. Cox avers that it was known for a display to indicate power in watts, citing for example, Watt (Ex. 1012, 3:45–47, 16:25–27), the 2007 Vision Fitness catalog, the 2007 Vision Fitness elliptical catalog, and the

²³ We understand Petitioner's citation “125–16” on page 8 of the Motion Surreply to refer to the range 125–126 because Ex. 1018 has 139 paragraphs and does not have a paragraph 216.

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2012 Vision Fitness Classic Console. Ex. 1018 ¶ 25 & accompanying figure (citing App. B, D at 4–5, T), ¶ 29, ¶ 104. Mr. Cox also avers Dalebout and Zhou disclose calculating power. *Id.* ¶¶ 104 (citing Ex. 1014, 11:12–22), 125 (citing Ex. 1006, 14:35–42).²⁴

Patent Owner argues that none of references cited by Petitioner disclose a dial and there is no disclosure of a display that displays the level of resistance as selected by a dial. *See* Motion Reply 13. Patent Owner argues that Wu’s console does not contain a dial. *Id.* Patent Owner does not dispute that Dalebout discloses buttons for selecting resistance, or that Riley discloses a dial. *See id.* Patent Owner’s primary argument is that none of the references disclose a dial with a separate display.²⁵ *See id.*

We agree with Patent Owner that Petitioner has not shown both a dial for selecting power and a display for indicating the resistance selected. We find that Dalebout discloses buttons 234a and 234b on console 144 for selecting resistance (Ex. 1014, 11:1–3, 11:38–45). Dalebout’s item 234 displays the resistance selected by buttons 234a and 234b. *See* Ex. 1014, 11:15–17, 11:40–46, 12:7–9, 12:10–20, Fig. 7. Thus, Dalebout discloses buttons for selecting resistance with a display for displaying resistance.

²⁴ An additional paragraph of Petitioner’s Motion Surreply on this issue was subject to an Order (Paper 35) striking a portion of the Motion Surreply as contrary to a stipulation of the parties regarding briefing. *See supra*, at 3.

²⁵ Patent Owner likens the recited dial to a “rotary encoder dial.” Motion Reply 13–14 (citing Ex. 2012 (Ferraro Decl.) ¶¶ 39–48). A rotary encoder dial corresponds to relative input levels rather than absolute input levels. *See* Ex. 2012 ¶¶ 42–43. Nevertheless, at oral argument, counsel for Patent Owner conceded that they are not arguing that the claim requires a rotary encoder dial. Tr. 70:9–10. We, therefore, do not require a showing of a rotary encoder dial in the prior art.

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Nevertheless, we determine that Petitioner has not shown that it would have been obvious to have both a dial for selecting resistance and a display for indicating resistance. Petitioner has not articulated a rationale for substituting the buttons of Dalebout with a dial. Further Petitioner has not shown that, even if a person of ordinary skill did so, that a person of ordinary skill would have left the display when substituting a dial for the buttons. *See* Opp. 22–23; Mot. Surreply 6–8. Further, we are also mindful of the testimony of Mr. Ferraro (Ex. 1012 ¶¶ 39–48) that there are different types of inputs, with different applications, and we conclude that Petitioner has not shown that this is a matter of simple substitution, nor has Petitioner shown that this is a situation where elements being combined simply operate according to their original functions in an unchanged manner. *See KSR*, 550 U.S. at 417 (a tribunal “must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.”). Petitioner has not met its burden of persuasion, in view of the evidence of record, why it would have been obvious to substitute a dial for Dalebout’s buttons and leave a display in place, or otherwise combine a dial with buttons.

For completeness of discussion, Patent Owner also argues that Petitioner has not shown a display that indicates both power and resistance level. Dalebout’s display indicates the number of calories being burned, e.g., at a given exertion level (*see* Fig. 7), but there is no disclosure that Dalebout’s display indicates a level of power. Dalebout and Zhou disclose displays for work or calories being burned by a user, but not power. Ex. 1014, 11:12–22; Ex. 1006, 14:35–42. Nevertheless, Watt discloses a display that indicates power (Ex. 1012, 3:45–47, 16:25–27). Petitioner argues that it

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would have been obvious to add the additional console functionality exemplified in Dalebout and Watt to generate and display user performance data, enable control of the resistance level, and monitor the fitness of the user, because of consumer demand for display of users' performance, and as the use of known elements to produce predictable results. Opp. 20, 26; Motion Surreply 9 (citing Ex. 1018 ¶¶ 28, 43, 104–105, 125–[126]). We are persuaded by Petitioner that a person of ordinary skill would have sought to display power, as taught by Watt, in addition to work (calories) so that a user of the exercise machine could monitor his or her performance data. *See* Ex. 1008 (Rawls Decl.) ¶¶ 207, 284. Although the invocation of consumer demand may in certain circumstances be conclusory, we credit the testimony that there was consumer demand for the ability to monitor power output for similar reasons as for monitoring calories, i.e., the display could inform the user how fast he or she is going to burn calories. *See id.* ¶¶ 207, 284; *see also* Ex. 1018 ¶¶ 90, 93. Such consoles allowed for a user to adjust machine parameters based on fitness monitoring. *See* Ex. 1018 ¶ 93.

ii. “magnetic braking mechanism including an arm configured to pivot relative to the flywheel” and other “Motivation to Combine” arguments

Petitioner asserts that using a magnetic braking unit with a flywheel was well known in the art. Opp. 24 (citing Ex. 1018 ¶¶ 17–23, 103; Ex. 1008 ¶¶ 47–55). Petitioner asserts that Wu discloses “[a] magnet set 24 is fitted to one side of the unidirectional flywheel 22.” *Id.* (citing Ex. 1002 ¶ 13; Pet. 33–34). Petitioner also asserts that Watt discloses flywheel 130, with brake assembly 132 that contains magnets 134, which create a magnetic flux. *Id.* (citing Ex. 1012, 4:31–35, 4:49–5:14). Petitioner asserts that Watt's overlap of magnets 134 with flywheel 130 may be increased or decreased by selectively pivoting brackets 136, 138 relative to the frame. *Id.*

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Petitioner asserts that the use of pivoting arms (i.e., brackets) to adjust resistance by moving magnets was standard for magnetic brakes in flywheel-based exercise machines. *Id.* (citing Ex. 1018 ¶¶ 17–23, 103). We find that Watt discloses this limitation. Ex. 1012, 4:31–35, 4:49–5:14. Watt discloses magnets 134 mounted on brackets 136, 138, such that the brackets pivot and can move towards flywheel 130 to increase forces opposing rotation of the flywheel. *Id.* at 4:49–5:14.

Petitioner contends that it would have been obvious to use a magnetic brake pivoting arm as taught by Watt with the magnetic flywheel of Wu, in the tower of Wu or Sawicky, as an obvious design choice using known elements to yield predictable results. Opp. 19, 24–25. Petitioner further contends that a magnetic braking mechanism has the advantages of allowing higher resistance with a small flywheel, that it can provide resistance silently, that it can provide constant resistance, and that it can provide more precise control of resistance. Motion Surreply 11–12 (citing Ex. 1008 ¶¶ 48, 148–149).

Patent Owner argues that it was not standard to use such a braking mechanism in a cable-pulley machine. Motion Reply 15–16 (citing Ex. 2013 ¶¶ 24:24–25:3, 25:16–26:1, 95:22–24). Prior art is analogous when it is: (1) from the same field of endeavor as the claimed invention; or (2) reasonably pertinent to the particular problem faced by the inventor, if the art is not from the same field of endeavor. *See In re Bigio*, 381 F.3d 1320, 1325–26 (Fed. Cir. 2004). We determine that Watt is within the same field of endeavor because it relates to exercise equipment, but even if a distinction could be drawn between aerobic and anaerobic equipment, Watt is also directed to the problem of adding resistance.

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Patent Owner argues that Petitioner has not articulated a sufficient reason to modify the braking system of Wu because Wu already achieves desired braking. Motion Reply 15–16. Patent Owner also argues that the use of a magnetic braking mechanism would be contrary to the teaching in Sawicky of dynamically adjusting the work load over the range of the stroke, that Sawicky was already light-weight, and that Sawicky’s freewheel produces air that fans the user, which would have been seen as advantageous to a user. *Id.* at 17 (citing Ex. 1011, 2:36–39), 18 (citing Ex. 1011, 1:51–55), 20 (citing Ex. 1011, 1:62–64). We are persuaded by Petitioner that, notwithstanding the change in design from air resistance to magnetic resistance, there are advantages to a magnetic braking system with a pivot arm such that a person of ordinary skill would have sought to modify Sawicky with the magnetic brake of Wu, i.e., to provide higher resistance, more particular selection of resistance (constant or varied), and quieter resistance than air-based systems. Ex. 1008 ¶¶ 48, 149; *see* Ex. 1018 ¶¶ 14, 91; *In re Urbanski*, 809 F.3d 1237, 1243 (Fed. Cir. 2016) (“one of ordinary skill would have been motivated to pursue the desirable properties taught by Wong, even at the expense of foregoing the benefit taught by Gross”). Further, the use of a magnetic braking system would more easily enable the use of an electronic console. *See* Ex. 1008 ¶ 149; *see, e.g.*, Ex. 1004 ¶¶ 65–66. We are also persuaded that a person of ordinary skill would have sought to further modify the magnetic brake of Wu to use a pivoting arm, as taught by Watt, i.e., to facilitate adjustment of resistance and for a light form-factor design of a magnetic brake. *See* Ex. 1018 ¶ 91.

Patent Owner also argues that Petitioner “has provided no explanation of where such a pivoting system would be mounted in the tower structure of

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Sawicky.” Motion Reply 16. Patent Owner also argues that such a device would topple over onto the user. *Id.* at 17. However, Petitioner argues that the design was well-known. Motion Surreply 12 (citing Ex. 1018 ¶¶ 18–23, 92; Ex. 1008 ¶¶ 46–55).

As to Patent Owner’s argument that Petitioner has not explained how to mount a pivoting arm onto the tower of Sawicky, we are persuaded by Petitioner that persons of ordinary skill in the art would have known how to attach a pivotable bracket to the tower of Sawicky, as modified by Wu, with predictable results. *See* Ex. 1018 ¶¶ 91–92. We find that Petitioner and Petitioner’s Declarant have established that a person of ordinary skill would have had a reasonable expectation of success in mounting a pivoting arm with bracketing, as taught by Watt. *See* Ex. 1018 ¶¶ 91–92; *see also id.* ¶¶ 17–20, 23, 75, 78. Although Patent Owner argues that Sawicky’s tower would not have been stable with the braking system as modified with the teachings of Wu and Watt (Motion Reply 17), we determine that a person of ordinary skill in the art could have used elements of the towers of Wu and Watt, i.e., to maintain stability.

iii. Conclusion

We conclude that Petitioner has not shown that the combination of Sawicky, Wu, Watt, Dalebout, and Hope renders obvious claim 21 because Petitioner has not shown that it would have been obvious to have both a dial for selecting resistance and a display for indicating resistance. We conclude that Petitioner has not shown that the combination of Sawicky, Wu, Watt, Dalebout, and Hope renders obvious claim 22 for the same reason.

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2. Claims 21 and 22 as Obvious Over Zhou, Sawicky, Lull, Pyles, and Riley

a. Lull (Ex. 1013)

Lull is titled “Exercise Bicycle With Magnetic Flywheel Brake” and relates to an exercise bicycle with a magnetic flywheel brake configured to finely adjust the resistance applied to the flywheel during exercise. Ex. 1013, [54], 1:29–31. According to Lull, prior art indoor cycles were hard to adjust in order to provide the proper handlebar height, seat height, and separation between the handlebar and seat for a myriad of different body sizes, e.g., to use in a group or club setting where people are constantly adjusting equipment. *Id.* at 1:48–56.

Lull discloses a brake arm pivotally mounted to the frame and including at least one magnet, with the magnet positioned in the brake arm adjacent to the flywheel and not in contact with the flywheel, and with the position of the magnet relative to the flywheel inducing a magnetic braking force on the flywheel. *Id.* at 2:1–5. Lull discloses a handle that is operably supported on the frame and configured to pivot the brake arm to position a pair of magnets relative to the flywheel to increase or decrease magnetic braking induced between the flywheel and the pair of magnets. *Id.* at 2:11–16.

b. Pyles (Ex. 1015)

Pyles is titled “Interactive Fitness Equipment” and relates to fitness equipment that is interactive with computers, the Internet, and other electronic media devices. Ex. 1015, [54], ¶ 1. According to Pyles, prior art fitness machines were limited to use with the particular electronic media device that is built into the piece of fitness equipment, had electronics that were at risk for becoming obsolete, and might have had video monitors that

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were top heavy, keyboards that were difficult to operate, or touch screens that could become smudged with operation. *See id.* ¶¶ 4–5. Pyles describes a need for fitness equipment that is adaptable to a variety of electronic media devices, is easy to operate, and has a balanced weight and appearance. *Id.* ¶ 6.

Pyles discloses a fitness device capable of interfacing with electronic media devices, such as computers, set-top boxes, cable boxes, video cassette recorders, and digital recording and playback devices. *Id.* ¶ 8. Additionally, there may be an electronic sensor for monitoring a particular exercise parameter and sending a corresponding signal to an interface. *Id.* Pyles describes that the fitness device allows the user to watch television and recorded video, listen to music, monitor the news, communicate with other people, and play games with a computer or over the Internet. *Id.* ¶ 10. The Internet link can also be used to connect to a special web site portal where a database of health and exercise information is processed for individual users of the fitness equipment. *Id.* The web site includes a special database whereby an individual user’s personal workout and health history can be accessed. *Id.* ¶ 10.

c. Riley (Ex. 1017)

Riley is titled “Athletic Performance Sensing and/or Tracking Systems and Methods” and relates to the same. Ex. 1017, [54], 1:21–22. In particular, such systems may include components for sensing athletic performance, storing and displaying desired information, and may facilitate transfer of athletic performance data from the performance sensing system to a processing system and/or a display device. *Id.* at 1:21–31. According to Riley, prior art electronic performance monitoring components had

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deficiencies, for example, in their portability, convenience, customizability, and/or user friendliness. *Id.* at 2:1–3. Riley describes certain embodiments where the electronic output device may be (and/or may include at least some functions of) a conventional and commercially available electronic audio, video, and/or alphanumeric display or output device (such as a cellular telephone, watch, PDA, pager, MP3 player, audio player, radio, portable television, portable DVD player, video playing device, or the like). *Id.* at 4:10–16. The interface system or device, when present and/or necessary, may physically plug into an existing port or jack (such as a universal serial bus port, a serial port, a parallel port, or other data or power/recharger input port) provided in the output device, including into conventional ports known and used in commercially available electronic devices. *Id.* at 4:23–29. Riley discloses a device that includes the following functions:

provide motivational and/or reward content, optionally media content at preselected times during a workout and/or during predetermined events (e.g., when a user approaches or reaches a goal, a personal best, etc.); provide specialized workout routines based on user selected events, properties, goals, etc.; and modify and extend workout routines by adding one or more songs or additional media content to the workout routine.

Id. at 2:37–45; *see also id.* at 2:15–37.

d. Analysis

In its Opposition, Petitioner sets forth its contentions as to how Zhou, Sawicky, Lull, Pyles, and Riley disclose each limitation of claims 21 and 22 and why it would have been obvious for a person of ordinary skill to have combined the teachings of the prior art. Opp. 31–35. Patent Owner disputes these contentions, for similar reasons as for the ground based on Wu, Sawicky, Watt, Dalebout, and Hope. Motion Reply 11–21.

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- i. “the console further including a dial and a display, the dial configured to allow the user to select the level of resistance applied to rotation of the flywheel by the magnetic braking mechanism, the display configured to provide an indication of the selected level of resistance, the display further configured to provide an indication of the calculated amount of power expended by the user”*

Petitioner asserts that Pyles discloses a console that can adjust resistance. Opp. 32 (citing Ex. 1015 ¶ 28). Petitioner asserts that Riley discloses the use of a “rotary dial” as an input on a computing device—of which a console is an example. Motion Surreply 8 (citing Ex. 1017, 13:21–25). Petitioner also asserts that Loach discloses a user interface “consisting of a display and a number of buttons, switches, and/or dials” and would “allow the user to select the level of resistance provided by the machine.” *Id.* at 8 (citing Ex. 1007, 3). Considering the evidence, we find that Pyles discloses a console that adjusts resistance, that Riley discloses a dial as an input on a computer, and that Loach discloses dials that adjust resistance. Ex. 1015 ¶ 28; Ex. 1017, 13:21–25; Ex. 1007, 3.

However, none of the prior art relied on for this ground discloses both a dial for selecting resistance and a display for indicating resistance, and Petitioner has not shown that it would have been obvious to combine them.

- ii. “magnetic braking mechanism including an arm configured to pivot relative to the flywheel” and other “Motivation to Combine” arguments*

Petitioner asserts that Zhou discloses that the flywheel “can utilize magnets” to create resistance. Opp. 31 (citing Ex. 1006 at 11:19–23; Ex. 1018 ¶ 124; Ex. 1008 ¶¶ 121, 344). Petitioner argues that Lull discloses a flywheel with a magnetic brake that “is pivotally coupled with the frame such that magnets provided in a brake arm may be positioned relative the

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flywheel to induce more or less resistive power on the flywheel.” *Id.* at 31–32 (citing Ex. 1013, 3:4–7; Ex. 1018 ¶ 124).

We determine that Lull recites the recited magnetic braking mechanism, with magnets in an arm that pivots relative to a flywheel to adjust resistance. Ex. 1013, 3:5–11.

Petitioner contends that a person of ordinary skill would have modified Sawicky’s tower with the magnetic braking of Zhou and Lull, and the console adjustment of Pyles and Riley, in order to provide for facile adjustment of resistance. *See* Opp. 22–23 (citing Ex. 1018 ¶¶ 97–99). Petitioner contends that a person of ordinary skill would have further modified the exercise apparatus with the fitness tracking of Riley in order to provide motivation for a user. Opp. 23 (citing Ex. 1018 ¶¶ 100–101). Patent Owner contends that a person of ordinary skill in the art would not have combined Zhou with Sawicky because it would have been contrary to the design goals of Sawicky, for similar reasons as argued for the ground based on Wu, Sawicky, Watt, Dalebout, and Hope. *See* Motion Reply 10–12.

For similar reasons as for the ground based on Wu, Sawicky, Watt, Dalebout, and Hope, we agree with Petitioner that a person of ordinary skill would have sought to replace the air resistance mechanism of Sawicky with the magnetic braking of Zhou and Lull (and provided the functionality of Riley). *See* Ex. 1018 (Cox. Decl.) ¶¶ 97–99; *see also supra* §§ III.F.1.d.ii., III.F.1.d.iii.

iii. Conclusion

We conclude that Petitioner has not shown that the combination of Zhou, Sawicky, Lull, Pyles, and Riley renders obvious claim 21, and its

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dependent claim 22, because Zhou, Sawicky, Lull, Pyles, and Riley do not disclose a display separate from a dial.

IV. PATENT OWNER'S MOTION TO EXCLUDE

Patent Owner moves to exclude Mr. Cox's Declaration. Mot. Excl. 2–8. Specifically, Patent Owner argues that Mr. Cox is not qualified to be a technical expert by reason of education or experience, and that although he has business experience working with others with technical knowledge of electrical circuitry, he does not possess that knowledge himself. *Id.* at 4–6 (citing, e.g., *Dur Auto. Sys. Of Ind., Inc. v. CTS Corp.*, 285 F.3d 609 (7th Cir. 2002); Ex. 2013, 51:9–12, 17:17–19, 33:10–15, 43:8–11).

In opposition, Petitioner argues that Mr. Cox never held himself out as a mechanical engineering expert, that his experience qualifies him as an expert in the field of product design/development of fitness and exercise equipment, and that his opinions in these proceedings are useful because that is the field in which the proposed claims fall. Paper 44, 10–11. Petitioner asserts that Mr. Cox was personally involved in product development at Vision Fitness and Dyaco North America, and personally worked on certain Vision Fitness consoles and the product underlying the Pyles reference. *Id.* at 3–4, 7 (citing Ex. 1018 ¶¶ 4–6, 20, 25–30, 82; Ex. 2013, 37:9–16).

Petitioner argues that there is no jury present in this proceeding, that Federal Rule of Evidence 702 takes a “liberal approach to expert witness qualification,” and that “[g]aps in an expert witness's qualifications or knowledge generally go to the weight of the witnesses's testimony, not its admissibility.” *Id.* at 6 (citing 29 Fed. Prac. & Proc. Evid. § 6264.1 (2d ed.)). Petitioner argues that mastery can be demonstrated by skill in analysis and answering questions and that formal training is not required. *Id.* at 9

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(citing *Carnegie Mellon Univ. v. Marvell Tech. Grp., Ltd.*, 807 F.3d 1283, 1302–1303 (Fed. Cir. 2015), *Argonaut Ins. Co. v. Samsung Heavy Indus. Co. Ltd.*, 929 F. Supp.2d 159, 172–76 (N.D.N.Y. 2013)). Patent Owner replies that *Carnegie Mellon* related to the admissibility of expert testimony for damages, and that the expert in *Argonaut* also had forty certifications. Paper 46, 9 (citing *Carnegie Mellon*, 807 F.3d at 1302–1303; *Argonaut*, 929 F. Supp.2d at 173).

We agree with Petitioner that Mr. Cox has experience working on the design teams for specific projects (Ex. 1018 ¶¶ 4–6, 20, 25–30, 82), and it is undisputed that he has business experience. Therefore, at the least, Mr. Cox is qualified to testify as to certain market and design considerations that bear on the motivation to combine, as well as what features were common in the industry. We determine that Patent Owner’s arguments regarding Mr. Cox’s lack of formal training go to issues of credibility, weight, and the sufficiency of the evidence rather than admissibility. *See SEB S.A. v. Montgomery Ward & Co., Inc.*, 594 F.3d 1360, 1372–73 (Fed. Cir. 2010) (upholding district court’s admission under Rule 702 of the testimony of a witness who lacked experience in the design of the patented invention, but had experience with materials selected for use in the invention); PTAB Trial Practice Guide August 2018 Update at 3 (“There is . . . no requirement of a perfect match between the expert’s experience and the relevant field.”), available at www.uspto.gov/sites/default/files/documents/2018_Revised_Trial_Practice_Guide.pdf; *see generally Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1363–64 (Fed. Cir. 2008); *Mytee Prods., Inc. v. Harris Research, Inc.*, 439 F. App’x 882, 886–87 (Fed. Cir. 2011) (non-precedential) (upholding admission of the testimony of an expert who “had experience

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relevant to the field of the invention,” despite admission that he was not a person of ordinary skill in the art). Accordingly, Patent Owner’s Motion to Exclude is *denied*.

V. CONCLUSION

We conclude that Petitioner has shown by a preponderance of the evidence that claims 1–4 and 10 are unpatentable as obvious over Wu and Jones; claims 5 and 6 are unpatentable as obvious over Wu and Webb; claims 7–9, and 11–20 are unpatentable as obvious over Wu, Watson, and Jones; claims 1–4 and 10 are unpatentable as obvious over Zhou and Jones; and claims 5 and 6 are unpatentable as obvious over Zhou and Webb.

We conclude that proposed substitute claims 21 and 22 lack adequate written description support, and the Motion to Amend is *denied*.

VI. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–20 are unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Amend (Paper 17) is *denied*;

FURTHER ORDERED that claims 1–20 of the ’276 patent be cancelled;

FURTHER ORDERED that Patent Owner’s Motion to Exclude (Paper 42) is *denied*; and

FURTHER ORDERED that, because this is a Final Written Decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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EXHIBIT 4

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Paper: 33
Entered: November 28, 2018

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NAUTILUS, INC.,
Petitioner,

v.

ICON HEALTH & FITNESS INC.,
Patent Owner.

Case IPR2017-01363
Patent 9,403,047 B2

Before GEORGE R. HOSKINS, TIMOTHY J. GOODSON, and
JAMES A. WORTH, *Administrative Patent Judges*.

GOODSON, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

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I. INTRODUCTION

A. Background

Petitioner filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–19 of U.S. Patent No. 9,403,047 B2 (Ex. 1001, “the ’047 patent”). Patent Owner filed a Preliminary Response to the Petition. Paper 6 (“Prelim. Resp.”).

We instituted an *inter partes* review on all of the challenged claims and asserted grounds. *See* Paper 7 (“Dec. on Inst.”). After institution, Patent Owner submitted a Patent Owner Response (Paper 17, “PO Resp.”) and Petitioner submitted a Petitioner Reply (Paper 21, “Reply”). A transcript of the oral hearing is included in the record. Paper 32 (“Tr.”). There are no motions pending in this proceeding.

The table below summarizes the instituted grounds as listed in the Order section of our Decision on Institution:

Reference(s)	Basis	Claim(s)
Sleamaker ¹	§ 103	1, 11–13
Sleamaker and Hanoun ²	§ 103	2–5
Sleamaker and Six-Pak ³	§ 103	6–10
Sleamaker, Six-Pak, and Hanoun	§ 103	14–19

¹ U.S. Patent No. 5,354,251, issued Oct. 11, 1994, Ex. 1002.

² U.S. Patent Pub. No. US 2007/0232452 A1, published Oct. 4, 2007, Ex. 1003.

³ *SPT-6 Six-Pack Trainer Owner’s Manual*, Ex. 1004. The parties both refer to this reference as Six-Pak. *See, e.g.*, Pet. 12; PO Resp. 1. That spelling is at odds with the reference itself, but to avoid confusion, we follow the parties’ convention.

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Reference(s)	Basis	Claim(s)
Sleamaker and Kleinman ⁴	§ 103	13
Sleamaker, Six-Pak, Hanoun, and Kleinman	§ 103	19
Six-Pak and Ehrenfried ⁵	§ 103	1, 6–13
Six-Pak, Ehrenfried, and Hanoun	§ 103	2–5, 14–19
Six-Pak, Ehrenfried, and Kleinman	§ 103	13
Six-Pak, Ehrenfried, Hanoun, and Kleinman	§ 103	19

Dec. on Inst. 24–25.

This listing of the grounds differs in certain respects from the summary of grounds chart shown in the Petition. *See* Pet. 15–16. The reason for these differences is that, as we explained in our Decision on Institution, the summary chart in the Petition does not accurately reflect the actual arguments presented in the Petition. *See* Dec. on Inst. 18. For example, Petitioner’s summary chart indicates that the first ground challenges claims 1–5 and 11–13 based on the combination of Sleamaker and Hanoun. *See* Pet. 15. Yet Petitioner’s arguments against claim 1 and its dependent claims 11–13 cite only Sleamaker and do not cite Hanoun. *See id.* at 23–26, 31–33. Thus, the grounds listed in the Order section of the Decision on Institution reflected the challenges presented in the Petition’s actual arguments, not the summary charts or headings. *See* Dec. on Inst. 18. We noted in the Decision on Institution that we were not recasting or reformulating the Petitioner’s challenges, but simply conforming the

⁴ Int’l Pub. No. WO 2008/152627 A2, published Dec. 18, 2008, Ex. 1006.

⁵ U.S. Patent No. 5,738,611, issued Apr. 14, 1998, Ex. 1005.

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grounds to the arguments actually presented in the Petition. *Id.* at 18–19. Following institution, neither party has expressed any disagreement with the statement of the grounds set forth in the Decision on Institution.

There is only one disputed issue in this proceeding: whether Petitioner has established that Six-Pak qualifies as a prior art printed publication. *See* PO Resp. 1–13; Reply 1–12; Tr. 23:3–5 (Patent Owner agreeing that the sole contested issue is the public availability of Six-Pak). That issue is discussed in Section III.C. below. The remaining aspects of Petitioner’s challenges—i.e., all grounds that do not rely on Six-Pak—are uncontested. *See* PO Resp. 1 (beginning brief by arguing that Petitioner failed to meet its burden regarding Six-Pak’s public availability and therefore “any grounds relying on that reference should be resolved in Patent Owner’s favor”); *id.* at 13 (concluding brief by requesting that “the Board find patentable the claims involved in any grounds using the Six-Pak reference”).⁶

We have authority under 35 U.S.C. § 6. Petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). To prevail, Petitioner must prove unpatentability by a preponderance of the evidence. *See* 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). This Final Written Decision is

⁶ The scheduling order in this proceeding reminded Patent Owner that “any arguments for patentability not raised in the [Patent Owner Response] will be deemed waived.” Paper 8, 5; *see also In re NuVasive, Inc.*, 842 F.3d 1376, 1380–81 (Fed. Cir. 2016) (holding that a patentee waived an argument by presenting it only in the preliminary proceeding and not during the trial, despite the Board cautioning the patentee that arguments not briefed in the response would be deemed waived).

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issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–5 and 11–13 of the '047 patent are unpatentable, but has not shown that claims 6–10 and 14–19 are unpatentable. *See* 35 U.S.C. § 316(e).

B. Related Matters

Petitioner states that the parties are engaged in litigation and in proceedings at the Board that are unrelated to the '047 patent. Pet. 2. Patent Owner does not identify any related district court or Board proceedings. Paper 3, 2.

C. The '047 Patent

The '047 patent issued on August 2, 2016, from an application filed on December 24, 2014. Ex. 1001, (45), (22). The patent claims priority to a provisional application filed on December 26, 2013. *Id.* at (60), 1:6–10.

The '047 patent describes a cable exercise machine that includes a sensor tracking the position of a flywheel incorporated into a magnetic resistance mechanism. *Id.* at 5:4–7. An energy tracker receives position information from the sensor and resistance level, and based on those inputs, can determine the amount of calories burned during a pull or over the course of a workout. *Id.* at 5:22–28. The flywheel is arranged to resist movement of four different resistance cables, and to rotate only in a single direction and only when a pull force is exerted by the user, such that the position of the flywheel represents work done as part of the workout. *Id.* at 5:29–32, 54–60.

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pull force on one of the cables causes the rotation of flywheel 17. *Id.* at 7:16–20. Flywheel assembly 16 includes arm 62 that contains at least one magnetic unit 63. *Id.* at 7:47–48. “As the arm 62 is rotated to or away from the proximity of the flywheel 17, the magnetic flux through which the flywheel 17 rotates changes, thereby altering the amount of rotational resistance experienced by the flywheel 17.” *Id.* at 7:50–54.

As can be seen in Figure 6, central shaft 19 is rigidly connected to body 74 of flywheel 17. *Id.* at 8:33–34. Bearing subassembly 76 is positioned to transfer a rotational load imparted in a first direction to flywheel 17. *Id.* at 8:34–36. Spool subassembly 18 is connected to at least one of the pull cables. *Id.* at 8:37–39. Flywheel 17 rotates with spool subassembly 18 in the first direction as the user pulls on the pull cables, but as spool subassembly rotates in the second direction imposed by counterweights 20, 22, bearing subassembly 76 is not positioned to transfer the rotational load from spool subassembly 18 to central shaft 19. *Id.* at 8:65–9:5. “Consequently, the flywheel 17 moves in just the first direction.” *Id.* at 9:7–8.

D. Challenged Claims

As noted above, Petitioner challenges all claims 1–19. Pet. 4. Claims 1, 14, and 19 are independent claims. Claim 1 is reproduced below, with labels [a]–[d] added by Petitioner for ease of reference:

1. A cable exercise machine, comprising:
 - [a] a first pull cable and a second pull cable incorporated into a frame;
 - [b] each of the first pull cable and the second pull cable being linked to at least one resistance mechanism; and

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[c] the at least one resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel;

[d] wherein the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

Ex. 1001, 12:48–58; *see also* Pet. 23–25 (reflecting labels for claim limitations).

II. CLAIM CONSTRUCTION

Under the version of our rules applicable to this *inter partes* review,⁷ claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification. 37 C.F.R. § 42.100(b) (2016); *Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). In our Decision on Institution, we determined that resolution of the disputed issues at that stage did not require an express interpretation of any claim term. *See* Dec. on Inst. 6 (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)). The parties’ post-institution briefing does not present any claim construction arguments or issues. We maintain our determination that no express claim construction is necessary to resolve the disputed issues.

⁷ The claim construction standard to be employed in *inter partes* reviews has changed for proceedings in which the petition was filed on or after November 13, 2018. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Nov. 13, 2018) (to be codified at 37 C.F.R. pt. 42).

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III. OBVIOUSNESS ANALYSIS

A. Legal Standards

In *Graham v. John Deere Co.*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under § 103 that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of nonobviousness such as “commercial success, long felt but unsolved needs, failure of others, etc.” *Id.* at 17–18; *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007). In this case, the parties did not present any evidence relating to secondary considerations. We discuss the first three *Graham* factors below.

B. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equip. Co., Inc. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

In our Decision on Institution, we adopted Petitioner’s proposal that an ordinarily skilled artisan at the time of the invention of the ’047 patent “would have had at least a bachelor’s degree in mechanical engineering or biomechanics and two years’ experience designing exercise equipment, or alternatively, an equivalent level of education and experience in product development and engineering regarding commercial fitness products.” Dec.

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on Inst. 7 (quoting Pet. 7). The parties’ post-institution briefing does not present any argument relating to the definition of the level of ordinary skill in the art. We maintain the definition of the level of ordinary skill in the art set forth in our Decision on Institution for the reasons stated therein. *See* Dec. on Inst. 7.

C. Whether Six-Pak Is a Prior Art Printed Publication

Many of Petitioner’s challenges rely on Six-Pak. *See supra* § I.A. A threshold issue for each of these grounds is whether Petitioner has shown that Six-Pak is prior art to the ’047 patent. Indeed, as noted above, the sole issue Patent Owner argues in its Patent Owner Response is that Petitioner failed to show that Six-Pak qualifies as a prior art printed publication. *See* PO Resp. 1–13; *see also* Tr. 23:3–9. We address this disputed threshold issue at the outset of our obviousness analysis.

1. Summary of Six-Pak

Six-Pak is an owner’s manual for the SPT-6 Six-Pack Trainer. Ex. 1004, 1. Six-Pak includes assembly instructions, which provide numerous drawings of the Six-Pack trainer. *Id.* at 2–15. As relevant to the printed publication analysis, Six-Pak includes a notation on the lower right corner of the cover page stating “SPT-6 Rev0 Revision Date 10-7-2008.” Ex. 1004, 1.

2. Factual and Procedural Background Relating to Six-Pak’s Status as a Printed Publication

The following two sentences constitute the entirety of the Petition’s argument regarding Six-Pak’s status as prior art to the ’047 patent: “Six-Pak was published October 7, 2008 and available online thereafter, making it prior art under §§ 102(a) and (b). Authentication and proof of the public

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accessibility of Six-Pak through the Wayback Machine appears in the Affidavit of Christopher Butler.” Pet. 12 (citing Ex. 1010).⁸

The Butler affidavit referenced in the Petition conveys information about the Internet Archive and its service, the Wayback Machine. *See* Ex. 1010 ¶¶ 2–3. The Butler affidavit explains that the Wayback Machine allows visitors to search the Internet Archive’s web archives by website address. *Id.* ¶ 3. The archived data that is available in the Wayback Machine is compiled by “crawlers, which surf the Web and automatically store copies of web files, preserving these files as they exist at the point of time of capture.” *Id.* ¶ 4. The Butler affidavit describes how to relate the web address of a page on the Internet Archive to the date on which that page was archived. *Id.* ¶ 5. The Butler affidavit includes Exhibit A, which is a compilation of “printouts of the Internet Archive’s records of the HTML files or PDF files for the URLs and the dates specified in the footer of the printout (HTML) or attached coversheet (PDF).” *Id.* ¶ 6.

Exhibit A to the Butler affidavit includes two web pages. The first is an archived page from the site “tuffstufffitness.com” that appears to list

⁸ Apart from the Butler affidavit, Petitioner has suggested that the Rawls declaration also supports that Six-Pak is prior art. *See* Reply 5 (citing Ex. 1007 ¶ 96); Tr. 12:3–12. In the cited testimony, Mr. Rawls refers to the Butler affidavit as the basis for his understanding that Six-Pak is a printed publication. Ex. 1007 ¶ 96. Mr. Rawls further testifies that Six-Pak “is a printed publication that a skilled artisan would have reasonably relied upon in understanding the design, functionality, and operation of the Six-Pak Trainer.” *Id.* As Petitioner agreed at the hearing, that testimony adds nothing beyond the Butler affidavit on the issue of whether and when Six-Pak became publicly accessible. *See* Tr. 12:13–23. Indeed, Mr. Rawls agreed during his deposition that he made no independent determination as to whether Six-Pak was publicly available, and stated that he had not seen Six-Pak until this case began. Ex. 2002, 54:11–55:11.

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assembly manuals for exercise equipment. Among the listed assembly manuals is that of the “SPT-6 Six-Pak Trainer.” The second is another archived page from the “tuffstufffitness.com” site that appears to be identical to Six-Pak relied on in this case. According to the URLs listed in these printouts and Mr. Butler’s explanation of how the URL address reflects the archive date, both of these web pages were archived on December 26, 2010. *Id.* ¶ 5.

In our Decision on Institution, we considered arguments from Patent Owner that Petitioner failed to produce sufficient proof that Six-Pak was publicly accessible in the prior art period. *See* Dec. on Inst. 9–13. We determined, based on the record at that stage of the proceeding, that Petitioner made a sufficient threshold showing that Six-Pak was publicly accessible before the priority date claimed in the ’047 patent. *Id.* at 10. In doing so, we emphasized the preliminary nature of our determination: “Patent Owner’s criticisms of Petitioner’s evidence may have merit, and Patent Owner is free to continue to challenge Petitioner’s showing on this issue during trial. However, at this stage, we need only decide whether Petitioner has shown a reasonable likelihood of prevailing in its challenge.” *Id.* We invited the parties to develop the evidentiary record further on the issue of Six-Pak’s status as a prior art printed publication:

We reiterate that our determination regarding the sufficiency of Petitioner’s evidence is for purposes of this Decision only and does not signify that Petitioner’s evidence would be adequate under the preponderance standard applicable at the Final Written Decision stage with a full record. *See* 35 U.S.C. § 316(e); *see also TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (“[T]he Board is not bound by any findings made in its Institution Decision. At that point, the Board is considering the matter preliminarily without the benefit of a full record. The

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Board is free to change its view of the merits after further development of the record, and *should do so* if convinced its initial inclinations were wrong.”). The parties may further develop the evidentiary record during the course of trial on the issue of whether and when Six-Pak became publicly accessible. *See Genzyme Therapeutic Prods. Ltd. P’ship v. Biomarin Pharma. Inc.*, 825 F.3d 1360, 1367 (Fed. Cir. 2016) (“The purpose of the trial in an *inter partes* review proceeding is to give the parties an opportunity to build a record by introducing evidence—not simply to weigh evidence of which the Board is already aware.”).

Id. at 13.

Despite this invitation, there has been no further development of the evidentiary record on this issue. For reasons Petitioner declined to explain at the hearing, Petitioner did not present any further evidence on the public accessibility of Six-Pak after the Decision on Institution. *See* Tr. 20:24–21:9. Aside from conducting a cross-examination of Mr. Rawls that produced a few lines of testimony relevant to the public accessibility of Six-Pak as discussed above, Patent Owner also did not present any evidence on this issue. Thus, the evidence available after trial on the issue of whether Six-Pak qualifies as a printed publication is effectively the same as in the preliminary phase of this proceeding. The parties’ post-institution briefs have been devoted to presenting legal arguments regarding the sufficiency or insufficiency of the evidentiary showing Petitioner initially presented with its Petition.

Specifically, Patent Owner argues that the Butler affidavit and the attached website printouts do not show that Six-Pak was publicly accessible because they do not establish that persons interested and ordinarily skilled in this subject matter exercising reasonable diligence could have located the document in the prior art period. *See* PO Resp. 7–9. According to Patent

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Owner, Petitioner’s evidence only establishes “that at a single time, a single entity (the Wayback Machine) accessed the PDF through a non-targeted, brute-force process of ‘crawlers . . . surf[ing] the Web and automatically stor[ing] copies of web files.’” *Id.* at 9 (quoting Ex. 1010 ¶ 4). Patent Owner discusses Federal Circuit cases and Board decisions that it relies on to support its argument that Petitioner’s showing is insufficient. *Id.* at 10–12. Patent Owner also asserts that Petitioner provided no evidence that anyone in the interested public actually accessed Six-Pak, that the website hosting Six-Pak was indexed or was a prominent forum for discussing exercise machines, or that a skilled artisan would have been able to locate or access Six-Pak. *Id.* at 12.

In its Reply, Petitioner responds that the TuffStuff webpage attached to the Butler affidavit provided a listing of products, including the Six-Pack trainer, and allowed persons viewing that page to download Six-Pak. Reply 2. The webpage “shows an easily navigable site of a fitness company with a home page link, a page for products, a link to a downloadable copy of the Six-Pack manual, and a 2010 copyright date. The manual contains a ‘rev date’ of 2008, which further supports that the document was available before 2012.” *Id.* at 3–4. Petitioner cites several Federal Circuit and Board decisions that it argues support its position, and argues that Patent Owner’s cases are distinguishable. *Id.* at 5–10.

3. Legal Standards Governing Whether a Reference Qualifies as a Printed Publication

“In an IPR, the petitioner bears the burden of establishing by a preponderance of the evidence that a particular document is a printed publication.” *Nobel Biocare Servs. AG v. Intradent USA, Inc.*, 903 F.3d 1365, 1375 (Fed. Cir. 2018) (citing *Medtronic, Inc. v. Barry*, 891 F.3d 1368,

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1380 (Fed. Cir. 2018)). “A reference will be considered publicly accessible if it was disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art exercising reasonable diligence can locate it.” *Medtronic*, 891 F.3d at 1380 (internal quotation marks and citations omitted). The Federal Circuit has interpreted the printed publication provision “broadly, finding that even relatively obscure documents qualify as prior art so long as the relevant public has a means of accessing them.” *GoPro, Inc. v. Contour IP Holding LLC*, __ F.3d __, 2018 WL 5660650, at *2 (Fed. Cir. Nov. 1, 2018) (citing *Jazz Pharm., Inc. v. Amneal Pharm., LLC*, 895 F.3d 1347, 1354–60 (Fed. Cir. 2018)).

4. Analysis of Whether Petitioner Established that Six-Pak Qualifies as a Prior Art Printed Publication

In our view, whether Petitioner has established that Six-Pak is a printed publication is a close question. Although Petitioner relies entirely on two archived webpages and an affidavit providing basic background information on the Wayback Machine, we acknowledge that there is some evidence of public accessibility within that limited showing. First, there is the “SPT-6Rev0 Revision Date 10-7-2008” notation on the cover of Six-Pak. Ex. 1004, 1. The Federal Circuit has explained that “the contents of a document can be relevant to the question of whether the document was publicly accessible.” *C.R. Bard, Inc. v. Angiodynamics, Inc.*, __ Fed. App’x __, 2018 WL 4677441, at *4 (Fed. Cir. Sept. 28, 2018) (nonprecedential). In *Nobel Biocare*, the court held that the “March 2003” date listed on a reference’s cover was not dispositive of the date of public accessibility, but that it was relevant evidence supporting the Board’s finding that the reference was publicly accessible at a conference that took place in March 2003. *Nobel Biocare*, 903 F.3d at 1376. Here, the notation on the cover of

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Six-Pak tends to show that the document was revised in October 2008, which is before the '047 patent's claimed priority date in December 2013. Ex. 1004, 1; Ex. 1001, (60). This notation does not indicate whether or when the document was published, but it is one piece of evidence to consider in the public accessibility analysis.

Second, the presence of Six-Pak on an archived version of TuffStuff's website indicates that the reference was available for capture by the Wayback Machine's "crawlers" in December 2010. Ex. 1010 ¶¶ 4–5, Ex. A. We note Patent Owner's argument that when it entered the URL shown in the footer of the first webpage attached to the Butler affidavit into an internet browser, it received an error message. PO Resp. 7–8. However, as we explained in the Decision on Institution, it appears that the URL in the footer is incomplete because there was insufficient space in the footer. *See* Dec. on Inst. 11 n.6. We were able to navigate to the webpage at issue using the Wayback Machine, and we listed the complete URL address in our Decision on Institution. *Id.* We find that Petitioner has shown that both of the webpages in Exhibit A to the Butler affidavit were archived by the Wayback Machine in December 2010.

Third, the archived TuffStuff website on which Six-Pak was available appears to be a commercial website providing information about TuffStuff's products. Ex. 1010, Ex. A.

However, even with these considerations in mind, we still find Petitioner's evidence to be deficient. What we find lacking is evidence that persons interested in exercise equipment knew of the TuffStuff website or would have been able to locate it through reasonable diligence. Even assuming that the two archived webpages captured by the Wayback Machine

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show that Six-Pak was available for anyone to view or download from the TuffStuff website,⁹ “[p]ublic accessibility’ requires more than technical accessibility.” *Acceleration Bay, LLC v. Activision Blizzard Inc.*, ___ F.3d ___, 2018 WL 5795976, at *5 (Fed. Cir. Nov. 6, 2018) (affirming Board’s determination that a reference uploaded to a university website in the prior art period was not a printed publication when it was not meaningfully indexed to allow an ordinarily skilled person to locate the reference using the website’s search function). Petitioner has presented no evidence, in the Butler affidavit or elsewhere in the record, that the TuffStuff website could have been located through a reasonably diligent internet search.

There is also no evidence in the record that persons interested in exercise machines knew of either the Six-Pack trainer or TuffStuff as a source of exercise equipment, such that they would have had reason to search the internet for information about TuffStuff or Six-Pak. *See C.R. Bard*, 2018 WL 4677441, at *4 (vacating Board’s determination that a product manual was a printed publication based on dates on the reference and a declaration stating that the manual was distributed and that users could request copies, because it was “unclear whether, even if a member of the relevant public could have requested it, there is any evidence that they would have had a reason to do so”).

We find *Blue Calypso, LLC v. Groupon, Inc.*, 815 F.3d 1331 (Fed. Cir. 2016) to be particularly instructive. There, the Federal Circuit upheld

⁹ Petitioner argues that the Butler affidavit shows that the TuffStuff website and Six-Pak were available to anyone on the internet (*see* Reply 5; Tr. 17:18–18:10), but the affidavit itself only states that the pages were captured by the Wayback Machine’s crawlers. Ex. 1010 ¶ 4. The affidavit does not state that the crawlers capture only webpages that are publicly available. *Id.*

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the Board’s determination that a petitioner failed to carry its burden to show that an interested party exercising reasonable diligence would have located the reference, which was a report available on a graduate student’s personal webpage. *Id.* at 1349. As in this case, there was no evidence indicating that the reference was viewed or downloaded, and no evidence that an ordinarily skilled artisan would know of the website on which the reference was located. *Id.* at 1349–1350. In another commonality with this case, the *Blue Calypso* record was “devoid of any evidence that a query of a search engine before the critical date, using any combination of search words, would have led to [the reference in question] appearing in the search results.” *Id.* at 1350.

The facts here parallel those of *Blue Calypso*, except for the nature of the website on which the reference was stored: TuffStuff’s website is commercial, while *Blue Calypso* concerned the personal website of a graduate student. Common experience suggests that the commercial website of an exercise equipment supplier would be more readily locatable than the personal website of a graduate student. Nevertheless, Petitioner has provided no evidence that persons interested in exercise equipment knew of the TuffStuff website or were familiar with TuffStuff as a source of exercise equipment. Indeed, what little evidence is available in the record on this issue tends to show that skilled artisans were not aware of TuffStuff or its Six-Pack trainer. When Mr. Rawls, Petitioner’s declarant, was asked at his deposition to name commercial fitness equipment companies, he listed several, but TuffStuff was not among them. *See* Ex. 2002, 83:15–25. Mr. Rawls also testified that he has never seen the Six-Pack trainer in

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person, and that the first time he saw Six-Pak was in connection with this case. *Id.* at 87:24–88:4, 55:9–11.

The evidentiary deficiency regarding the public accessibility of Six-Pak could have been shored up in myriad ways. Petitioner could have provided evidence that TuffStuff was known among those interested in exercise equipment as an exercise equipment supplier, that Six-Pak or TuffStuff’s website was locatable through keyword searching on the internet during the prior art period, that TuffStuff’s website received traffic from interested persons in the art during the prior art period, that Six-Pak was actually viewed or downloaded from TuffStuff’s site during the prior art period by interested persons in the art, or that Six-Pak was distributed in some other way during the prior art period, such as accompanying sales of the Six-Pack trainer. The absence of such evidence is made more conspicuous by the procedural history of this case, in which Six-Pak’s status as a printed publication was one of the few contested issues in the preliminary phase and the Decision on Institution invited additional development of the evidentiary record on this issue. *See supra* § III.C.2.

We have considered the cases Petitioner cites, but we find that they do not militate in favor of a determination that Six-Pak is a printed publication on the facts presented here. The case Petitioner relies on most heavily is *Voter Verified, Inc. v. Premier Election Solutions, Inc.*, 698 F.3d 1374, 1380 (Fed. Cir. 2012). There, the Federal Circuit affirmed a district court’s determination that an article posted on a public website called Risks Digest was publicly available because persons skilled in the relevant field knew of the Risks Digest site and an interested researcher would have found the article using that site’s search functions and reasonable diligence. *Id.* at

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1380–81. A critical distinction from this case is that in *Voter Verified*, “the uncontested evidence indicate[d] that a person of ordinary skill interested in electronic voting would have been independently aware of the Risks Digest as a prominent forum for discussing such technologies.” *Id.* at 1381. Here, in contrast, there is no evidence that skilled artisans or persons interested in exercise equipment were aware of the TuffStuff website.

The Board decisions Petitioner cites are inapposite because they addressed references for which public accessibility was undisputed (*Samsung Elecs. Co. Ltd. v. Rosetta-Wireless Corp.*, Case IPR2016-00622, slip op. at 64 (PTAB Aug. 21, 2017) (Paper 48); *Mitsubishi Cable Indus., Ltd. v. Goto Denshi Co., Ltd.*, Case IPR2015-01108, slip op. at 5–6 (PTAB Oct. 25, 2016) (Paper 20)) or there was additional evidence beyond an archived website to support public accessibility (*Advanced Micro Devices, Inc. v. LG Elecs. Inc.*, Case IPR2015-01409, slip op. at 13–14 (PTAB Dec. 27, 2016) (Paper 28)). In *Johns Manville Corp. v. Knauf Insulation, Inc.*, Case IPR2016-00130, slip op. at 20–21 (PTAB May 8, 2017) (Paper 35), the Wayback Machine evidence was discussed in the context of a motion to exclude for lack of authentication. Here, authenticity of the archived webpages is not disputed. *See* Tr. 23:11–15. The Board’s institution decisions that Petitioner cites (*see* Reply 6 n.1) do not move us because, as the Decision on Institution in this case explains, evidence that is sufficient to show a reasonable likelihood of prevailing for institution purposes is not necessarily sufficient to satisfy the Petitioner’s ultimate burden to show unpatentability by a preponderance of the evidence after trial. *See* Dec. on Inst. 13.

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5. Conclusion

For the reasons given above, we determine that Petitioner has not established that Six-Pak qualifies as a prior art printed publication. This determination disposes of all of Petitioner's grounds that rely at least in part on Six-Pak.

D. Summary of the Remaining Prior Art References

1. Sleamaker

Sleamaker is titled "Multifunction Exercise Machine with Ergometric Input-Responsive Resistance." Ex. 1002, [54]. Figures 1 and 7 are reproduced below:

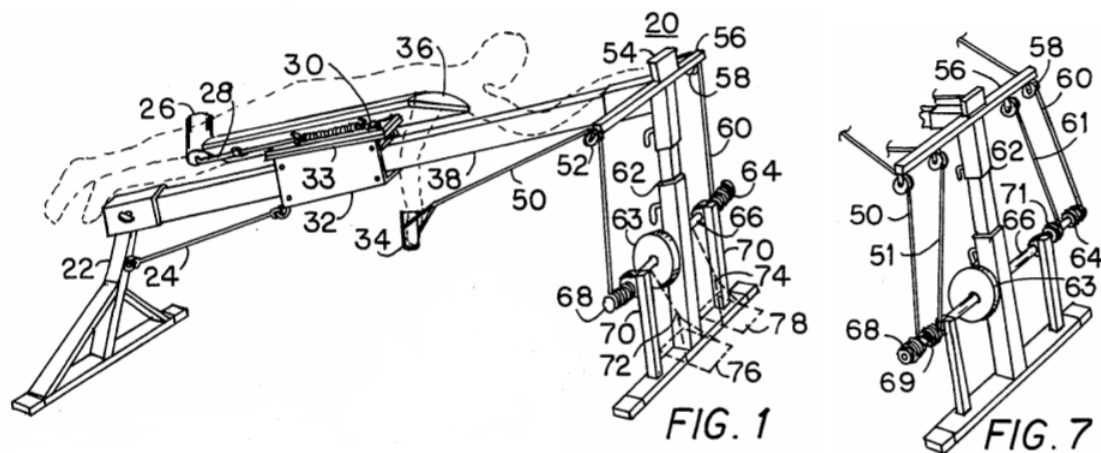


Figure 1 is a perspective view of multifunction exercise machine 20 with front stanchion post 62, rear stanchion assembly with post 22, and monorail 38 secured between the stanchions. *Id.* at 3:23–27, 5:4–11. Figure 7 is a partial perspective view showing the front stanchion of an alternate embodiment. *Id.* at 3:46–49.

As can be seen in Figure 1, attached to front stanchion cross bar 56 are pulleys 52 and 58, which receive pull cables 50 and 60. *Id.* at 5:20–21. The cables have means for attaching handles 34 at a first end, and “are secured, at a second end, to an ergometric variable input-responsive

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resistance assembly employing a flywheel 63 connected to a rotating shaft 66 propelled by the pull cables 50 and 60 attached to the rotating shaft by spring-loaded retracting one-way clutch drivers 68 and 64 respectively.” *Id.* at 5:24–29. Monitor 54, mounted in the middle of front stanchion cross bar 56, “records the level of activity based upon electronic signals from standard sensors which measure the number of turns and the speed of turning of the rotating shaft or the flywheel, which information is translated electronically by standard electronic circuitry into speed and distance and energy output levels.” *Id.* at 5:46–53.

The embodiment shown in Figure 7 includes “an additional pair of pull cables 51 and 61 winding around spring-loaded returning one-way drivers 69 and 71 on the rotating shaft 66.” *Id.* at 6:57–60.

2. *Hanoun*

Hanoun discloses a computerized spinning exercise system that includes a sensing system to count rotations of a flywheel and a computer that processes the count of rotations and a selected resistance setting to generate user performance data. Ex. 1003, (54), (57). Rotations of the flywheel can be counted “by using an optical position sensor to measure changes in the rotation of the flywheel” or “by using a magnet applied to the flywheel and a Hall-effect sensor applied to a stationary element.” *Id.* ¶ 64.

3. *Kleinman*

Kleinman relates to an exercise machine that allows a user to perform a plurality of exercises. Ex. 1006, 1:7–9. The portion of Kleinman’s disclosure that is of primary relevance to Petitioner’s challenges here is its description of a counterweight to rewind a cable around a reel after the user releases the cable. *See id.* at 12:23–25, Fig. 10.

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E. Sleamaker-Led Obviousness Grounds

1. Claims 1 and 11–13

We find persuasive Petitioner’s contentions that Sleamaker teaches each of the limitations of claim 1. *See* Pet. 23–26. Specifically, we find that Sleamaker teaches limitation [a] because Sleamaker’s pair of pull cables 50 and 60 correspond to the claimed first and second pull cables, and Sleamaker’s front stanchion cross bar 56, stanchion post 62, and side supports 70 correspond to the claimed frame. Ex. 1002, 5:20–21, Fig. 1; *see also* Pet. 23. We find that Sleamaker teaches limitation [b] because Sleamaker describes that pull cables 50 and 60 are secured to a resistance mechanism — namely, “an ergometric variable input-responsive resistance assembly employing a flywheel 63 connected to a rotating shaft 66.” Ex. 1002, 5:20–27; Pet. 24. We find that Sleamaker teaches limitation [c] because Sleamaker’s ergometric variable input-responsive resistance assembly includes flywheel 63, and Sleamaker discloses that flywheel assemblies can include “a magnetic (eddy current) three wheeled interconnected system used as the ergometric input-responsive resistance means on the rotating shaft.” Ex. 1002, 7:50–63; Pet. 24–25. Finally, we find that Sleamaker teaches limitation [d] because Sleamaker’s flywheel 63 is attached to rotating shaft 66, which corresponds to the claimed central shaft, and the claimed multiple spools are shown where pull cables 51 and 61 are wound around shaft 66. Ex. 1002, 5:24–29, 6:57–60, Fig. 7; Pet. 25–26.

Claim 11 depends from claim 1 and adds that “the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, a third pull cable, and a fo[u]rth pull cable.” Ex. 1001, 13:25–28. We

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find persuasive Petitioner’s contention that Sleamaker’s Figure 7 discloses the claimed arrangement, insofar as cables 50, 51, 60, 61 are attached to the multiple spools wrapped around shaft 66. Ex. 1002, Fig. 7; *see also* Pet. 31.

Claim 12 depends from claim 1 and additionally recites that “the flywheel is arranged to rotate in just a single direction while at least one of the multiple spools are arranged to rotate in the single direction and an opposite direction.” Ex. 1001, 13:29–32. We find that Sleamaker teaches this limitation because it discloses that flywheel 63 on rotating shaft 66 is “propelled by the pull cables 50 and 60 attached to the rotating shaft by spring-loaded retracting one-way clutch drivers 68 and 64 respectively.” Ex. 1002, 5:27–29; *see also* Pet. 32. We credit Mr. Rawls’s testimony that an ordinarily skilled artisan would understand that “spools on the same central shaft as the flywheel would rotate in the same single direction as the flywheel when the cables are pulled and then rotate in the opposite direction to rewind the cables while the flywheel continues to rotate in the single direction.” Ex. 1007 ¶ 153. As Mr. Rawls persuasively explains, “[t]hat is the purpose of having ‘one-way clutch drivers’ inside of the spools.” *Id.*

Claim 13 depends from claim 12 and adds that “the multiple spools are linked to at least one counterweight.” Ex. 1001, 13:33–34. We find that Sleamaker discloses that return springs in the clutch drivers cause pull cables 50 and 60 to rewind. Ex. 1001, 6:7–11; *see also* Pet. 32–33. We credit the testimony of Mr. Rawls, which is supported by citation to documentary evidence, that a counterweight attached to a spool was a known alternative to a spring-loaded clutch driver. Ex. 1007 ¶ 154. We further credit Mr. Rawls’s testimony that a counterweight and a spring clutch are among a finite number of options for rewinding cable spool, and

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that using a counterweight in place of a spring clutch would provide predictable results. *Id.* ¶ 157. Thus, we find persuasive Petitioner’s contention that claim 13 would have been obvious to a person of ordinary skill in the art in view of Sleamaker. *See* Pet. 32–33.

In a backup position, Petitioner argues that claim 13 would have been obvious based on Sleamaker and Kleinman. *See* Pet. 69–70. Specifically, Petitioner argues that to the extent a reference is needed that expressly discloses a counterweight, Kleinman fills that gap. *See id.* We find persuasive Petitioner’s contention that Kleinman teaches a counterweight to rewind cable while a flywheel rotates in only a first direction. *See* Ex. 1006, 12; Pet. 69–70. We further find that Petitioner has presented adequate reasoning for combining Sleamaker and Kleinman, insofar as Petitioner contends that “[i]ncorporating this feature of Kleinman would be one of a finite number of ways to cause cable [to] rewind, and would be an example of using a known element in a known way to reach an entirely predictable result.” *Id.* at 70 (citing Ex. 1007 ¶ 255).

2. *Claims 2–5*

Petitioner contends that claims 2–5 would have been obvious over Sleamaker in view of Hanoun. Pet. 26–31. Petitioner argues that a skilled artisan would have been motivated to combine Sleamaker with Hanoun as proposed in its challenges to these claims because by 2013, it was known that exercise machines should track user performance and the market demanded such features. *Id.* at 19 (citing Ex. 1007 ¶¶ 44–50, 117–118). Sleamaker discloses electronics to track user performance (*see* Ex. 1002, 5:46–55), but according to Petitioner, “because the direction of its invention was not focused on the details of such electronics, a POSITA would have

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looked to Hanoun for a complimentary and more comprehensive system to measure performance in a flywheel-based exercise system.” Pet. 19 (citing Ex. 1007 ¶¶ 117–118). We find that Petitioner’s stated reasoning for combining Sleamaker and Hanoun is supported by rational underpinnings.

Claim 2 depends from claim 1 and recites that the machine “further compris[es] a sensor arranged to collect information about a position of the flywheel.” Ex. 1001, 12:59–61. We find that Sleamaker discloses that monitor 54 records activity level based on signals from sensors that measure the number of turns of the flywheel. Ex. 1002, 5:46–55. We find that Hanoun discloses “an optical position sensor to measure changes in the rotation of the flywheel.” Ex. 1003 ¶ 64. Thus, we find persuasive Petitioner’s contention that claim 2 would have been obvious based on the cited combination. *See* Pet. 26–27.

Claim 3 depends from claim 2 and adds that the machine “further compris[es] a counter in communication with the sensor and arranged to track a number of rotations of the flywheel.” Ex. 1001, 12:62–64. As noted above in connection with claim 2, we find that Sleamaker teaches that monitor 54 records activity level based on sensors that measure the number of turns of the flywheel. Ex. 1002, 5:46–55. We further find that Hanoun teaches a sensing system that counts rotations of the flywheel. Ex. 1003 ¶ 67. Thus, we find persuasive Petitioner’s contention that claim 3 would have been obvious based on the cited combination. *See* Pet. 27–28.

Claim 4 depends from claim 3 and further recites that “the counter is arranged to provide the number as an input to an energy tracker.” Ex. 1001, 12:65–67. We find that Hanoun teaches the subject matter of this claim insofar as it describes that “the energy exerted by the person may be

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determined from the resistance setting and the count of rotations.” Ex. 1003 ¶ 66, Fig. 8; *see also* Pet. 29–30. Claim 5 depends from claim 4 and recites that “the energy tracker is arranged to receive as an input a level of magnetic resistance exerted on the flywheel with the magnetic unit.” Ex. 1001, 13:1–4. We find that Hanoun teaches the subject matter of this claim because it describes determining the amount of energy exerted from the resistance setting, and further describes that the resistance setting can be sensed or assumed based on user-selected settings. Ex. 1003 ¶¶ 65–66; *see also* Ex. 1007 ¶ 150. Thus, we are persuaded by Petitioner’s arguments that claims 4 and 5 would have been obvious based on Sleamaker and Hanoun. *See* Pet. 29–31.

3. Claims 6–10 and 14–19

Petitioner contends that claims 6–10 would have been obvious over Sleamaker in view of Six-Pak. Pet. 33–40. Petitioner further contends that claims 14–19 would have been obvious over Sleamaker in view of Six-Pak and Hanoun. *Id.* at 41–47. These challenges fail because they rely on Six-Pak, and as discussed in Section III.C. above, Petitioner has not carried its burden to show that Six-Pak is a prior art printed publication.

4. Conclusions Regarding Sleamaker-Led Obviousness Grounds

We determine that Petitioner has proven by a preponderance of the evidence that claims 1 and 11–13 would have been obvious based on Sleamaker, that claim 13 would have been obvious based on Sleamaker and Kleinman, and that claims 2–5 would have been obvious based on Sleamaker and Hanoun. We further determine that Petitioner has not shown by a preponderance of the evidence that claims 6–10 would have been

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obvious based on Sleamaker and Six-Pak, nor that claims 14–19 would have been obvious based on Sleamaker, Six-Pak, and Hanoun.

F. Six-Pak Led Obviousness Grounds

Each of Petitioner’s remaining grounds relies on Six-Pak in combination with other secondary references. *See* Pet. 47–70. Because Petitioner has not established that Six-Pak qualifies as a prior art printed publication (*see supra* § III.C), we determine that Petitioner has not shown that the challenged claims are unpatentable on these asserted grounds. In particular, Petitioner has not shown that Six-Pak and Ehrenfried render obvious any of claims 1 and 6–13; that Six-Pak, Ehrenfried, and Hanoun render obvious any of claims 2–5 and 14–19; that Six-Pak, Ehrenfried, and Kleinman render obvious claim 13; or that Six-Pak, Ehrenfried, Hanoun, and Kleinman render obvious claim 19.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner has shown that claims 1–5 and 11–13 of U.S. Patent No. 9,403,047 B2 are unpatentable;

FURTHER ORDERED that Petitioner has not shown that any of claims 6–10 and 14–19 of U.S. Patent No. 9,403,047 B2 is unpatentable; and

FURTHER ORDERED that parties to the proceeding seeking judicial review of this Final Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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EXHIBIT 5

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NAUTILUS, INC.
Petitioner

v.

ICON HEALTH & FITNESS, INC.
Patent Owner

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PATENT OWNER MOTION TO AMEND

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I. INTRODUCTION

Pursuant to 37 C.F.R. § 42.121, Patent Owner hereby moves to substitute claims 21 and 22 shown in the claim listing (Exhibit 2002) for claims 1 and 2, respectively, of U.S. Patent No. 9,616,276 (the “276 Patent”), contingent on the Board’s determination that claims 1 and 2 are unpatentable. Substitute claims 21 and 22 are shown in the claim listing with single brackets to indicate deleted text and underlining to indicate inserted text, thus “show[ing] the changes clearly” as required by 37 C.F.R. § 42.121(b).

II. PETITIONER BEARS THE BURDEN OF PROVING UNPATENTABILITY OF SUBSTITUTE CLAIMS 21 AND 22

With respect to a motion to amend pursuant to 37 C.F.R. § 42.121, the Federal Circuit recently held that “the PTO may *not* place [the burden of persuasion with respect to the patentability of amended claims] on the patentee.” *Aqua Prods., Inc. v. Matal*, 872 F.3d 1290, 1327 (Fed. Cir. 2017) (en banc); *see also* USPTO memo titled “Guidance on Motions to Amend in view of Aqua Products,” pages 1-2. More recently, the Federal Circuit further clarified that “the *petitioner bears the burden* of proving that the proposed amended claims are unpatentable ‘by a preponderance of the evidence’” in a motion to amend in an IPR. *Bosch Auto. Serv. Solutions, LLC v. Matal*, No. 2015-1928, slip op. at 22 (Fed. Cir. December 22, 2017) (citing 35 U.S.C. § 316(e)). Therefore, in light of these two recent Federal Circuit decisions, the burden of proving that substitute claims 21 and 22 are *unpatentable* falls on

Petitioner, and Patent Owner does **not** bear the burden on proving that substitute claims 21 and 22 are **patentable**.

III. SUPPORT FOR SUBSTITUTE CLAIMS 21 AND 22

Patent Owner respectfully submits that the requirements of 37 C.F.R. §§ 42.121(b)(1) and (b)(2) appear to have been effectively overruled by the above-noted Federal Circuit guidance in *Aqua Products* and *Bosch Automotive*. In particular, to the extent that 37 C.F.R. §§ 42.121(b)(1) and (b)(2) require the **patent owner** who files a motion to amend to bear the burden of proving that substitute claims are **patentable** under 35 U.S.C. § 112, Patent Owner respectfully submits that *Aqua Products* and *Bosch Automotive* stand for the proposition that the patent owner does **not** bear the burden of proving that such substitute claims are **patentable** under any of 35 U.S.C. §§ 101, 102, 103, or 112. Instead these decisions require that the **petitioner** bear the burden of proving that such substitute claims are **unpatentable** under any of 35 U.S.C. §§ 101, 102, 103, or 112. Therefore, in this IPR proceeding, since Patent Owner does **not** bear the burden of proving that substitute claims 21 and 22 are **patentable** under 35 U.S.C. § 112, Patent Owner is no longer required to “set forth . . . support” for substitute claims 21 and 22 as stated in 37 C.F.R. §§ 42.121(b)(1) and (b)(2). Nevertheless, for the convenience of Petitioner and the Board, and without assuming any burden whatsoever to prove

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that substitute claims 21 and 22 are patentable under 35 U.S.C. § 112, Patent Owner sets forth support for substitute claims 21 and 22 below.

The application that ultimately issued as the '276 Patent was U.S. Application No. 15/019,088 (the "'088 Application"), the original disclosure of which includes an originally-filed specification (Exhibit 2003) and originally-filed drawings (Exhibit 2004). The '088 Application includes a valid claim for priority to U.S. Application No. 14/213,793 (the "'793 Application") (with originally-filed specification - Exhibit 2005 - and originally-filed drawings - Exhibit 2006) and to U.S. Provisional Application No. 61/786,007 (the "'007 Application") (with originally-filed specification - Exhibit 2007 - and originally-filed drawings - Exhibit 2008). This claim for priority is valid because the '088 Application satisfies the requirements of MPEP § 211 with respect to the '793 and '007 Applications including copendency, identical inventors, a specific reference to the prior applications (see paragraph [0001]), and virtually identical original disclosures. With respect to the virtually identical original disclosures, all three applications have virtually identical drawings and virtually identical "Brief Description of the Drawings" and "Detailed Description" sections in their respective specifications (*i.e.*, paragraphs [0036]-[0062] of the '088 Application are virtually identical to paragraphs [0036]-[0062], respectively of the '793 Application and paragraphs [0027]-[0053] of the '007 Application, respectively).

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Support for substitute claims 21 and 22 can be found in the originally-filed specifications and originally-filed drawings of the '088, '793, and '007 Applications, as set forth in the chart below, and Patent Owner expressly seeks priority to and the benefit of the earlier filing date of the '007 Application for substitute claims 21 and 22. Because the drawings in the '088, '793, and '007 Applications are virtually identical, citations in the chart below to figures in the drawings will be grouped together. Also, because the specification paragraphs cited to in the chart below for the '088 and '793 are virtually identical and numbered identically, the citations to the specification paragraphs of the '088 and '793 will be grouped together, while the differently-numbered specification paragraphs in the specification of the '007 Applications will be cited to separately (note, because of virtually identical specification paragraphs, the paragraph numbers of the '007 Application in the chart below are exactly nine (9) indices lower than the paragraph numbers of the '088 and '793 Applications – e.g., ¶ [0043] of the '088/'793 Applications is cited in the chart below along with ¶ [0034] of the '007 Application).

Further, since the original disclosure of U.S. Patent Application No. 13/754,361 (the "'361 Application") (with originally-filed specification - Exhibit 2009 - and originally-filed drawings - Exhibit 2010) is "incorporated by reference herein in its entirety" in each of the '088, '793, and '007 Applications (see

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paragraphs [0062] in the '088 and '793 Applications and paragraph [0053] of the '007 Application), the demonstration in the chart below of support for substitute claims 21 and 22 in the original disclosure of the '361 Application also qualifies as a demonstration of support for substitute claims 21 and 22 in the original disclosures of the '088, '793, and '007 Applications (via incorporation of the '361 Application).

Finally, the portions of the specifications and drawings of the '088, '793, '007, and '361 Applications cited to in the chart below are only *examples* of support for each of the limitations of substitute claims 21 and 22. Other locations in '088, '793, '007, and '361 Applications may provide additional support for the limitations of substitute claims 21 and 22. Therefore, support for the limitations of substitute claims 21 and 22 is not limited to the *example* support cited to in the chart below.

Ref.	Claim 1	Support in '088, '793, and '007 Applications
21a	[1] <u>21</u> . A strength training apparatus, comprising:	('088/'793/'007 Applications) FIG. 1, element 100; ('088/'793 Applications) ¶ [0043] and ('007 Application) ¶ [0034] (strength training apparatus 100)

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21b	a base member;	('088/'793/'007 Applications) FIG. 1, element 102; ('088/'793 Applications) ¶ [0043] and ('007 Application) ¶ [0034] (base member 102)
21c	a tower structure coupled to the base member;	('088/'793/'007 Applications) FIG. 1, elements 104 and 102; ('088/'793 Applications) ¶ [0043] and ('007 Application) ¶ [0034] (tower structure 104 may be coupled to base member 102)
21d	at least one arm coupled to the tower structure;	('088/'793/'007 Applications) FIG. 1, elements 108A and 104; ('088/'793 Applications) ¶ [0044] and ('007 Application) ¶ [0035] (arm 108A may be coupled to tower structure 104)
21e	a pulley being coupled to the at least one arm;	('088/'793/'007 Applications) FIG. 1, elements 114A and 108a; ('088/'793 Applications) ¶ [0045] and ('007 Application) ¶ [0036] (pulley 114A may be couple to arm 108A)
21f	a cable extending through the pulley;	('088/'793/'007 Applications) FIG. 1, elements 116A and 114A; ('088/'793 Applications) ¶ [0045] and ('007 Application) ¶ [0036] (cable 116A may extend through pulley 114A)

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21g	a handle coupled to a first end of the cable;	('088/'793/'007 Applications) FIG. 1, elements 118A and 116A; ('088/'793 Applications) ¶ [0045] and ('007 Application) ¶ [0036] (handle 118A may be coupled to a first end of cable 116A)
21h	a flywheel connected to the tower structure;	('088/'793/'007) FIGS. 2-3, elements 120 and 104; ('088/'793) ¶ [0046] and ('007) ¶ [0037] (flywheel 120 may be connected to tower structure 104)
21i	a magnetic braking mechanism that resists movement of the flywheel <u>by applying a level of resistance to rotation of the flywheel, the magnetic braking mechanism including an arm</u>	('088/'793/'007 Applications) FIGS. 2-3, elements 124, 126, and 120; ('088/'793 Applications) ¶¶ [0046]-[0047] and ('007 Application) ¶¶ [0037]-[0038] (magnetic braking mechanism 124 may resist movement of flywheel 120 by applying a level of resistance to rotation of flywheel 120, magnetic braking mechanism 124 may include arm 126 having multiple magnets that are arranged to provide a magnetic flux through which flywheel 120

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	<p><u>having multiple magnets that are arranged to provide a magnetic flux through which the flywheel rotates, the arm configured to pivot, relative to the flywheel, to alter the level of resistance applied to rotation of the flywheel; [and]</u></p>	<p>rotates, arm 126 may be configured to pivot, relative to flywheel 120, to alter the level of resistance applied to rotation of flywheel 120)</p>
21j	<p>a console in communication with the magnetic braking mechanism, <u>the console configured to calculate an amount of power</u></p>	<p>('088/'793/'007 Applications) FIGS. 1-2, elements 130, 132, 134, 124, 118A, and 120; ('088/'793 Applications) ¶¶ [0050]-[0051] and ('007 Application) ¶¶ [0041]-[0042] (The control panel or controller 130 is a console in communication with magnetic braking mechanism 124, console 130 may be configured</p>

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<p><u>expended by a user</u></p> <p><u>pulling on the handle</u></p> <p><u>during a workout</u></p> <p><u>routine, the console</u></p> <p><u>further including a</u></p> <p><u>dial and a display,</u></p> <p><u>the dial configured</u></p> <p><u>to allow the user to</u></p> <p><u>select the level of</u></p> <p><u>resistance applied to</u></p> <p><u>rotation of the</u></p> <p><u>flywheel by the</u></p> <p><u>magnetic braking</u></p> <p><u>mechanism, the</u></p> <p><u>display configured to</u></p> <p><u>provide an indication</u></p> <p><u>of the selected level</u></p> <p><u>of resistance, the</u></p> <p><u>display further</u></p>	<p>to makes certain calculations and may include</p> <p>dial input device 132 and display output device</p> <p>134, dial 132 may be configured to allow the user</p> <p>to select the level of resistance applied to rotation</p> <p>of flywheel 120 by magnetic braking mechanism</p> <p>124, display 134 may be configured to provide an</p> <p>indication of the selected level of resistance);</p> <p>('088/'793 Applications) ¶¶ [0059] and [0061]-</p> <p>[0062] and ('007 Application) ¶¶ [0050] and</p> <p>[0052]-[0053] (The calculations of console 130</p> <p>may include an amount of power expended by a</p> <p>user pulling on the handle 118A during a</p> <p>workout routine, display 134 may be configured</p> <p>to provide an indication of the calculated amount</p> <p>of power expended by the user); ('088/'793</p> <p>Applications) ¶ [0050] and ('007 Application) ¶</p> <p>[0041] (console 130 may be configured with to</p> <p>communication via “connections” with “other</p> <p>devices”)</p>
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	<p><u>configured to</u></p> <p><u>provide an indication</u></p> <p><u>of the calculated</u></p> <p><u>amount of power</u></p> <p><u>expended by the</u></p> <p><u>user, the console</u></p> <p><u>further configured to</u></p> <p><u>communicate via</u></p> <p><u>radio with a portable</u></p> <p><u>computing device;</u></p>	<p>('088/'793/'007 Applications, via incorporation of '361 Application) FIG. 1, elements 102 and 106 (the strength training apparatus 100 of the '088 Application corresponds to the exercise apparatus 102 of the '361 Application, and one of the “other devices” disclosed in ¶ [0050] of the '088 Application corresponds to the client computing device 106 of the '361 Application); ¶¶ [0046]-[0047] (the “connections” for communication with “other devices” disclosed in ¶ [0050] of the '088 Application may include a “radio” connection, such as with a “Radio Frequency (RF) tag”, a “radio communication link,” or “other methods” of radio communication), ¶ [0049] (the “other devices” disclosed in ¶ [0050] of the '088 Application may include client computing device 106 that may be a “portable computing device”)</p>
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21k	<u>an application program configured to be loaded on the portable computing device, the application program configured to:</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIGS. 2 and 9, elements 106-a, 108-a, and 917; ¶ [0050] (data sensing module 108-a may be configured to be loaded on portable computing device 106-a); ¶ [0080] (data sensing module 108-a may be stored in system memory 917 and a module loaded into RAM of system memory 917 may be an “application program”)
21k1	<u>receive and store a physical fitness goal that may be achieved using the strength training apparatus, the stored physical fitness goal inputted by the user via an interface</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIGS. 2-3, elements 106-a, 108-a, 208/208-a, and 304; ¶ [0050] (goal information module 304 of profile module 208/208-a of application program 108-a may be configured to receive and store a physical fitness goal that may be achieved using strength training apparatus 102), ¶ [0058] (the physical fitness goal may be inputted into goal information

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	<u>provided by the portable computing device;</u>	module 304 by the user via an interface provided by portable computing device 106).
21k2	<u>track progress of the user toward completing the stored physical fitness goal;</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIG. 2, elements 106-a, 108-a, and 212; ¶ [0056] (tracking module 212 of application program 108-a may be configured to track progress of the user toward completing the stored physical fitness goal).
21k3	<u>indicate to the user the progress of the user toward completing the stored physical fitness goal;</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIGS. 2 and 5, elements 106-a, 108-a, 208/208-a, 212/212-a, and 506; ¶ [0066] (goal monitoring module 506 of tracking module 212/212-a of application program 108-a may be configured to indicate to the user the progress of the user toward completing the stored physical fitness goal)
21k4	<u>determine whether the user has</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIGS. 2 and 5, elements

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	<u>achieved the stored physical fitness goal;</u>	106-a, 108-a, 208/208-a, 212/212-a, and 504; ¶ [0066] (workout history module 504 of tracking module 212/212-a of application program 108-a may be configured to determine whether the user has achieved the stored physical fitness goal)
21k5	<u>indicate to the user that the user has achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved;</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIGS. 2 and 5, elements 106-a, 108-a, 208/208-a, 212/212-a, 504, and 506; ¶ [0066] (goal monitoring module 506 of tracking module 212/212-a of application program 108-a may be configured to indicate to the user that the user has achieved the stored physical fitness goal when it is determined by the workout history module 504 that the stored physical fitness goal has been achieved)
21k6	<u>display a customized workout routine for the user to perform with the</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIG. 2, elements 106-a, 108-a, and 208; ¶¶ [0052] and [0088] (profile module 208 of application program 108-a may be

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	<u>strength training apparatus, the customized workout routine providing instructions to the user relating to the customized workout routine;</u>	configured to display a customized workout routine for the user to perform with the strength training apparatus 102, the customized workout routine providing instructions to the user relating to the customized workout routine)
21k7	<u>display videos on the portable computing device that demonstrate how to use the strength training apparatus;</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIGS. 2 and 4, elements 106-a, 108-a, 212/212-a, and 408; ¶ [0062] (demonstration generation module 408 of customized workout module 210/210-a of application program 108-a may be configured to display videos on the portable computing device that demonstrate how to use the strength training apparatus)
21k8	<u>display text on the portable</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIGS. 2 and 4; elements

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	<u>computing device</u> <u>that instructs how to</u> <u>use the strength</u> <u>training apparatus;</u> <u>and</u>	106-a, 108-a, 212/212-a, and 408; ¶ [0062] (demonstration generation module 408 of customized workout module 210/210-a of application program 108-a may be configured to text on the portable computing device that instructs how to use the strength training apparatus)
21k9	<u>store</u> <u>information</u> <u>regarding past</u> <u>workout routines</u> <u>performed by the</u> <u>user on the strength</u> <u>training apparatus;</u>	('088/'793/'007 Applications , via incorporation of '361 Application) FIGS. 2 and 5, elements 106-a, 108-a, 208/208-a, 212/212-a, and 504; ¶ [0065] (workout history module 504 of tracking module 212/212-a of application program 108-a may be configured to store information regarding past workout routines performed by the user on the strength training apparatus 102)
211	<u>a second pulley</u> <u>rotatable about a</u> <u>second axis that is</u>	('088/'793/'007 Applications) FIG. 4A, elements 154 and 104; ('088/'793 Applications) ¶ [0053] and ('007 Application) ¶ [0044] (sprocket 154 may be a second pulley, and the

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	<u>fixed relative to the tower structure;</u>	second axis of second pulley 154 may be fixed relative to tower structure 104)
21m	<u>a third pulley rotatable about a third axis that is displaceable relative to the tower structure; and</u>	('088/'793/'007 Applications) FIG. 4A, elements 156 and 104; ('088/'793 Applications) ¶ [0053] and ('007 Application) ¶ [0044] (sprocket 156 may be a third pulley, and the third axis of third pulley 156 may be displaceable relative to tower structure 104)
21n	<u>a drive cable coupled to the cable and that extends through the second pulley and through the third pulley and that includes an end that is coupled to a fixed location with respect to the tower structure;</u>	('088/'793/'007 Applications) FIG. 4A, elements 150, 116A, 154, 156, 158, and 104; ('088/'793 Applications) ¶ [0053] and ('007 Application) ¶ [0044] (drive chain 150 may be a drive cable, and may be coupled to cable 116A and may extend through second pulley 154 and through third pulley 156 and may include an end 158 that is coupled to a fixed location with respect to tower structure 104)

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21o	<p>wherein</p> <p>displacement of the</p> <p>handle results in</p> <p><u>displacement of the</u></p> <p><u>cable, rotation of the</u></p> <p><u>pulley, displacement</u></p> <p><u>of the drive cable,</u></p> <p><u>rotation of the</u></p> <p><u>second pulley,</u></p> <p>rotation of the</p> <p>flywheel, <u>rotation of</u></p> <p><u>the third pulley, and</u></p> <p><u>displacement of the</u></p> <p><u>third axis of the third</u></p> <p><u>pulley relative to the</u></p> <p><u>tower structure.</u></p>	<p>('088/'793/'007 Applications) FIGS. 4A-5B,</p> <p>elements 118A, 116A, 114A, 150, 154, 120, 156,</p> <p>and 104; ('088/'793 Applications) ¶¶ [0053]-</p> <p>[0055] and ('007 Application) ¶¶ [0044]-[0046]</p> <p>(displacement of handle 118A may result in</p> <p>displacement of cable 116A, rotation of pulley</p> <p>114A, displacement of drive cable 150, rotation</p> <p>of second pulley 154, rotation of flywheel 120,</p> <p>rotation of third pulley 156, and displacement of</p> <p>the third axis of third pulley 156 relative to tower</p> <p>structure 104)</p>
Ref.	Claim 22	
22a	<p>[2] <u>22</u>. The strength</p> <p>training apparatus</p>	<p>('088/'793/'007 Applications) FIGS. 4A-5B,</p> <p>elements 100 and 160; ('088/'793 Applications)</p>

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	of claim [1] <u>21</u> , further including a biasing member, <u>wherein:</u>	¶¶ [0053]-[0055] and ('007 Application) ¶¶ [0044]-[0046] (strength training apparatus 100 may include biasing member 160)
22b	<u>the biasing member</u> <u>is coupled to the</u> <u>third pulley and</u> <u>includes an end that</u> <u>is coupled to a fixed</u> <u>location with respect</u> <u>to the tower</u> <u>structure;</u>	('088/'793/'007 Applications) FIGS. 4A-5B, elements 160, 156, and 104; ('088/'793 Applications) ¶¶ [0053]-[0055] and ('007 Application) ¶¶ [0044]-[0046] (biasing member 160 may be coupled to third pulley 156 and may include an end that is coupled to a fixed location with respect to tower structure 104)
22c	<u>the biasing member</u> <u>is configured to</u> <u>allow the third axis</u> <u>of the third pulley to</u> <u>be displaced</u> <u>vertically downward</u>	('088/'793/'007 Applications) FIGS. 4A-5B, elements 160, 156, and 104; ('088/'793 Applications) ¶¶ [0053]-[0055] and ('007 Application) ¶¶ [0044]-[0046] (biasing member 160 may be configured to allow the third axis of third pulley 156 to be displaced vertically downward relative to tower structure 104)

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	<u>relative to the tower structure;</u>	
22d	<u>the biasing member is configured to pull the third axis of the third pulley to vertically return upward relative to the tower structure;</u>	('088/'793/'007 Applications) FIGS. 4A-5B, elements 160, 156, and 104; ('088/'793 Applications) ¶¶ [0053]-[0055] and ('007 Application) ¶¶ [0044]-[0046] (biasing member 160 may be configured to pull the third axis of third pulley 156 to vertically return upward relative to tower structure 104)
22e	<u>the drive cable is configured such that the user pulling on the handle causes the drive cable to drive the flywheel to rotate and causes the drive cable to vertically displace the third axis of the third</u>	('088/'793/'007 Applications) FIGS. 4A-5B, elements 150, 118A, 120, 156, and 104; ('088/'793 Applications) ¶¶ [0053]-[0055] and ('007 Application) ¶¶ [0044]-[0046] (drive cable 150 may be configured such that the user pulling on handle 118A causes drive cable 150 to drive flywheel 120 to rotate and causes drive cable 150 to vertically displace the third axis of third pulley 156 downward relative to tower structure 104)

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	<u>pulley downward</u> <u>relative to the tower</u> <u>structure; and</u>	
22f	<u>the biasing member</u> <u>is configured such</u> <u>that the user</u> <u>releasing the handle,</u> <u>after pulling thereon,</u> <u>pulls the third axis of</u> <u>the third pulley to</u> <u>vertically return</u> <u>upward relative to</u> <u>the tower structure</u> <u>and pulls on the</u> <u>drive cable which</u> [that] returns the handle without causing rotation of the flywheel.	(’088/’793/’007 Applications) FIGS. 4A-5B, elements 160, 118A, 156, 104, 150, and 120; (’088/’793 Applications) ¶¶ [0053]-[0055] and (’007 Application) ¶¶ [0044]-[0046] (biasing member 160 may be configured such that the user releasing handle 118A, after pulling thereon, pulls the third axis of third pulley 156 to vertically return upward relative to tower structure 104 and pulls on drive cable 150 which returns handle 118A without causing rotation of flywheel 120)

IV. RESPONSE TO RELEVANT GROUNDS OF UNPATENTABILITY

Patent Owner respectfully submits that the requirements of 37 C.F.R. § 42.121(a)(2)(i) appear to have been effectively overruled by the above-noted Federal Circuit guidance in *Aqua Products* and *Bosch Automotive*. In particular, to the extent that 37 C.F.R. § 42.121(a)(2)(i) requires the **patent owner** who files a motion to amend to bear the burden of proving that substitute claims are **patentable** under the 35 U.S.C. § 102 or § 103 grounds of unpatentability involved in the IPR trial, Patent Owner respectfully submits that, as explained above, *Aqua Products* and *Bosch Automotive Service Solutions* stand for the proposition that the patent owner does **not** bear the burden on proving that such substitute claims are **patentable** under any of 35 U.S.C. § 102 or § 103. Instead these decisions require that the **petitioner** bear the burden of proving that substitute claims are **unpatentable** under any of 35 U.S.C. §§ 101, 102, 103, or 112. Therefore, in this IPR proceeding, since Patent Owner does **not** bear the burden of proving that substitute claims 21 and 22 are **patentable** under 35 U.S.C. § 102 or § 103, Patent Owner is no longer required to “respond to a ground of unpatentability involved in the trial” for substitute claims 21 and 22 as stated in 37 C.F.R. § 42.121(a)(2)(i). Nevertheless, for the convenience of Petitioner and the Board, and without assuming any burden whatsoever to prove that substitute claims 21 and 22 are patentable under 35 U.S.C. § 102 or § 103, Patent Owner responds to the grounds

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of unpatentability involved in the trial for claims 1 and 2 (which substitute claims 21 and 22 replace) below.

With respect to claims 1 and 2 of the '276 Patent (which claims 21 and 22 are proposed as substitutes), trial was instituted in the two co-pending IPRs of the '276 Patent (IPR2017-01407 and IPR2017-01407) based on the following four grounds of unpatentability ("Grounds 1-4"):

1. As obvious over Sawicky and Wu (in IPR2017-01407)
2. As obvious over Sawicky and Zhou (in IPR2017-01407)
3. As obvious over Wu and Jones (in IPR2017-01408)
4. As obvious over Zhou and Jones (in IPR2017-01408)

(See IPR2017-01407, Institution Decision, Paper 6, page 26; *see also* IPR2017-01408, Institution Decision, Paper 7, page 32).

In response to Grounds 1-4, Patent Owner notes that the amendments to claims 1 and 2 (in substitute claims 21 and 22) overcome each of Grounds 1-4 at least because ***none*** of the four combinations of references in Grounds 1-4 renders obvious all of the limitations of substitute claims 21 and 22.

For example, substitute claim 21 recites (and substitute claim 22 also recites, due to depending from substitute claim 21) that the "console [is] further configured to communicate ***via radio*** with a ***portable computing device***." (See limitation 21j in chart above). In Grounds 1-4, the claimed "console" is identified

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as the “console 10” of Wu or the “work measurement device 3100” of Zhou. (*See* IPR2017-01407, Petition, Paper 1, pages 34-35 and 56-57; *see also* IPR2017-01408 Petition, Paper 1, pages 29 and 55-56). However, neither the “console 10” of Wu nor the “work measurement device 3100” of Zhou appears to be configured to communicate “via radio” with a “portable computing device” as required in limitation 21j of substitute claims 21 and 22. Therefore, limitation 21j of substitute claims 21 and 22 appears to overcome Grounds 1-4.

In another example, substitute claims 21 and 22 recite “an application program configured to be loaded on the portable computing device” that is configured with the following nine general functionalities:

1. configured to receive and store a physical fitness goal that may be achieved using the strength training apparatus, the stored physical fitness goal inputted by the user via an interface provided by the portable computing device;
2. configured to track progress of the user toward completing the stored physical fitness goal;
3. configured to indicate to the user the progress of the user toward completing the stored physical fitness goal;
4. configured to determine whether the user has achieved the stored physical fitness goal;

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5. configured to indicate to the user that the user has achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved;
6. configured to display a customized workout routine for the user to perform with the strength training apparatus, the customized workout routine providing instructions to the user relating to the customized workout routine;
7. configured to display videos on the portable computing device that demonstrate how to use the strength training apparatus;
8. configured to display text on the portable computing device that instructs how to use the strength training apparatus; and
9. configured to store information regarding past workout routines performed by the user on the strength training apparatus.

(See limitations 21k and 21k1-21k9 in chart above). However, none of Grounds 1-4 addresses any “application program” configured to be loaded on a “portable computing device” as recited in limitation 21j of substitute claims 21 and 22, nor do any of Grounds 1-4 address the nine general functionalities of the “application program” listed above and recited in limitation 21j1-21j9 of substitute claims 21 and 22. (See IPR2017-01407 Petition, Sections VI(C) and VI(E); *see also* IPR2017-01408 Petition, Sections VI(C) and VI(F)). Further, these limitations do not appear

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to be taught in any of the four combinations of references in Grounds 1-4. Therefore, limitations 21k and 21k1-21k9 of substitute claims 21 and 22 appear to overcome Grounds 1-4.

Patent Owner notes that these are just two general *examples of limitations* in substitute claims 21 and 22 that appear to overcome Grounds 1-4, and *other limitations* in substitute claims 21 and 22 also likely overcome Grounds 1-4. However, since Petitioner bears the burden of proving that substitute claims 21 and 22 are unpatentable, Patent Owner has not attempted in this motion to provide a comprehensive identification of all limitations in substitute claims 21 and 22 that overcome Grounds 1-4.

Accordingly, unless and until *Petitioner bears its burden* of proving that substitute claims 21 and 22 are *unpatentable*, Patent Owner respectfully submits that substitute claims 21 and 22 must be determined to be patentable by the Board.

V. CONCLUSION

For at least the foregoing reasons, Patent Owner respectfully requests that the Board substitute claims 21 and 22 for claims 1 and 2 in the '276 Patent, contingent on the Board's determination that claims 1 and 2 are unpatentable.

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Dated: March 5, 2018

By: /John T. Gadd/
John T. Gadd
(Reg. No. 52,928)
Attorney for Patent Owner
ICON Health & Fitness, Inc.

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CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e)(1), and in light of agreement of the parties, a copy of the foregoing PATENT OWNER MOTION TO AMEND was served via electronic mail to lead and back-up counsel of record for Petitioner at Nautilus-ICON-IPR@perkinscoie.com.

Dated: March 5, 2018

By: /John T. Gadd/
John T. Gadd
(Reg. No. 52,928)
Attorney for Patent Owner
ICON Health & Fitness, Inc.

EXHIBIT 6

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NAUTILUS, INC.,
Petitioner,

v.

ICON HEALTH & FITNESS, INC.,
Patent Owner.

Case IPR2017-01363 (Patent 9,403,047 B2)
Case IPR2017-01407 (Patent 9,616,276 B2)
Case IPR2017-01408 (Patent 9,616,276 B2)

Record of Oral Hearing
Held: August 29, 2018

Before GEORGE R. HOSKINS, TIMOTHY J. GOODSON, and
JAMES A. WORTH, *Administrative Patent Judges*.

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Case IPR2017-01407 (Patent 9,616,276 B2)

Case IPR2017-01408 (Patent 9,616,276 B2)

APPEARANCES:

ON BEHALF OF THE PETITIONER:

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ON BEHALF OF THE PATENT OWNER:

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ADAM F. SMOOT, ESQUIRE
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The above-entitled matter came on for hearing on Wednesday, August 29, 2018, commencing at 1:00 p.m., at the U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia.

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P R O C E E D I N G S

1 - - - - -

2 JUDGE WORTH: Good afternoon. Please be seated.

3 JUDGE GOODSON: Welcome to the Patent Trial and Appeal

4 Board. This is the hearing for Case [IPR2017-0]1363 involving Patent
5 Number 9,403,047 and Cases IPR2017-01407 and 1408, both of which
6 involve Patent Number 9,616,276. I'm Judge Goodson and I'm appearing
7 remotely from the San Jose Regional Office. Judge Hoskins is also
8 participating remotely and Judge Worth is there with you in Alexandria.

9 Can we begin with introductions from counsel, starting with
10 counsel for Petitioner?

11 MR. McBRAYER: Good afternoon or good morning as the case
12 may be, Your Honor. I'm Ryan McBrayer of Perkins Coie for Petitioner
13 Nautilus. With me today are my several colleagues who have been involved
14 in the IPR and one who is observing here, Lane Polozola and Stephanie
15 Nelson who have been with me as counsel in the matter and then Dr. Karen
16 Lisko, jury trial consultant, who wanted to take the opportunity to observe a
17 PTAB hearing and is here today observing.

18 JUDGE GOODSON: Thank you. And, Mr. McBrayer, are you
19 going to be doing the presentation in all three cases today?

20 MR. McBRAYER: Yes, Your Honor.

21 JUDGE GOODSON: Okay. Thank you.

22 And counsel for Patent Owner?

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1 MR. SMOOT: Thank you, Your Honors. Adam Smoot
2 representing Patent Owner ICON Health and Fitness. I will be discussing
3 IPR2017-01363 and then the Motion to Exclude in the other two IPRs.

4 MR. GADD: Good afternoon. My name is John Gadd, also here
5 for Patent Owner ICON Health and Fitness, and I will be discussing the
6 Motion to Amend in the two IPRs.

7 JUDGE GOODSON: Okay. Thank you.

8 I'll also go over some reminders from our trial hearing order of
9 August 14, 2018. Please indicate the slide number or the page number of
10 the -- from the record that you're referring to during your presentations.
11 That will help Judge Hoskins and I and will also clarify the record in the
12 transcript.

13 If during the argument today either party believes that something
14 the other party is saying is improper in any way, please just save that issue
15 and raise it during your presentation as opposed to interrupting the other
16 party's presentation to object. Each party will have 90 minutes of total time
17 to present arguments.

18 Have the parties agreed to an allocation of time as between the
19 proceedings?

20 MR. McBRAYER: Your Honor, we conferred about it and were
21 unable to come to an agreement, other than we both anticipate taking less
22 than the 30 minutes the Board allotted in its order as the default for the 1363
23 proceeding. So we fully intend both of us to wrap up before the 30-minute
24 point and can take whatever break, or if the Board wants to roll right into the

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1 1407 and 1408 IPRs, but we didn't have a limit that we agreed to less than
2 30 minutes.

3 JUDGE GOODSON: All right. Well, that will make the
4 housekeeping a little more complicated since we would like for the parties to
5 have the same allocation of time as between the two cases. So do you intend
6 to reserve some rebuttal time for your presentation?

7 MR. McBRAYER: I intend to reserve a small amount of rebuttal
8 time in our presentation. If the Court needs the parties to agree on a single
9 limit, I think we can agree on 25, although -- is that correct?

10 MR. SMOOT: Uh-huh.

11 MR. McBRAYER: I'll let -- I think Judge Worth can see counsel
12 nodding at the table, you know, 25, but I think we both fully intend to take
13 less than that.

14 JUDGE GOODSON: Okay. So we'll shoot for 25 minutes and
15 we'll keep our time accordingly, and we'll begin with the 1363 case.
16 Petitioner will go first to present its case and then the Patent Owner will
17 respond. The Petitioner can reserve time and Patent Owner can reserve
18 sur-rebuttal time.

19 So, Mr. McBrayer, you'd like to reserve -- how many minutes
20 would you like us to have you reserve for rebuttal time?

21 MR. McBRAYER: Here five minutes, Your Honor.

22 JUDGE GOODSON: Five minutes. Okay.

23 MR. McBRAYER: Thank you.

24 JUDGE GOODSON: And, Mr. Smoot, how many minutes of
25 sur-rebuttal time would you like us to reserve for you?

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1 MR. SMOOT: Five minutes as well, Your Honor. Thank you.

2 JUDGE GOODSON: Okay. Thanks.

3 Okay. Well, that's all the preliminaries, so, Mr. McBrayer, we'll
4 turn it over to you and you can begin whenever you're ready.

5 MR. McBRAYER: Thank you, Your Honor.

6 In the 1363 case, as Your Honors may remember or recall from
7 your recent review of the papers, where we start is that the Petitioner
8 Nautilus petitioned based on a number of grounds that they've asserted
9 claims or the Petition claims were unpatentable.

10 ICON, Patent Owner ICON, responded only with respect to a
11 single issue that a particular piece of prior art was not publicly accessible on
12 that date. It's the TuffStuff web page and reference manual which is subject
13 to a declaration from the Internet Archive, but Patent Owner ICON did not
14 argue that the claims are somehow patentable over the prior art if the
15 TuffStuff manual is, indeed, or deemed to be publicly accessible.

16 So we are not going to start out by reiterating all of the art and all
17 of the grounds and all of the motivations to combine, because we view those
18 as having been waived and conceded by ICON. However, because we have
19 the burden, it is worth noting for the Board that consistent with your findings
20 in the Institution Order that all of the grounds here that we're dealing with in
21 every single case, we are dealing with fitness machines that are in the art and
22 in the same technical field as the claims.

23 So this is not a situation where we've got some art that we're
24 claiming is nonetheless analogous art, but it's from a different industry. It

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1 might be around what you might think of as the periphery of analogous art.

2 That's not the case here.

3 Everything that we have put before the Board to show why these
4 claims are unpatentable is a fitness machine, and broadly throughout all the
5 grounds Your Honors found, and it is the case as we stand here today,
6 combinations that are of known components combined in known ways that
7 reach predictable results. That under Patent Office guidance all the way up
8 to the United States Supreme Court precedent in KSR is prima facie
9 obvious, that when one takes known components, combines them in known
10 ways and reaches a predictable result, that's the very definition of obvious
11 and that is what the Board has before it here today.

12 But also, and this is important, in every situation you have more.
13 You have additional reasons why the experts in this case have testified
14 people of ordinary skill in the art would have been motivated to combine the
15 references as we have discussed. Maybe it's because there are weight
16 limitations and by having a particular component one saves weight and that
17 makes it more shippable. Maybe that's because it makes it safer.

18 Whatever the reason is with respect to the particular grounds, there
19 are additional motivations to combine that provide motivation for a person
20 of ordinary skill in the art to combine these things in the way we have. So
21 while we acknowledge our burden, ICON has not responded, has not
22 contested it and that the Board has already found consistent with our robust
23 motivation to combine case that these claims, indeed, are unpatentable and
24 we ask that you do so, again, when you find, as I'll get to in a moment, that
25 the TuffStuff web page and manuals were publicly accessible prior art.

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1 JUDGE WORTH: Just on that point.

2 MR. McBRAYER: Yes, Your Honor.

3 JUDGE WORTH: You're not arguing that something that is
4 waived is, therefore, deemed admitted.

5 MR. McBRAYER: No, Your Honor. We don't think it's admitted,
6 but we just think for the purposes of oral argument, I don't want to spend a
7 bunch of Your Honors' time going over why these combinations should be
8 made. I'll note I don't think ICON has admitted that, but under the Patent
9 Office's Trial Guidelines and the Board's rules, ICON can't get up here today
10 and have any other argument, for instance, why we wouldn't combine a
11 particular reference with another particular reference or why, you know, the
12 Wu reference might not have disclosed a pull cable or something like that.
13 They have waived the ability to make that argument.

14 So to the extent there's a distinction for Your Honor between being
15 waived and being admitted, I think it's leopards with the same spots, Your
16 Honor, and ICON can't stand up and the Board already found that we
17 provided what -- as what I'm trying to note is what we view as a case that
18 more than meets our burden where you've got now before the Board
19 undisputed combinations of fitness equipment, undisputed known
20 components, undisputably combined in known ways and undisputably
21 reaching predictable results. That under any case law, guidance, guideline
22 out there is obvious.

23 So let me turn to the TuffStuff manual and web page, if I might,
24 Your Honors. And what I wanted to start with there is what we view as
25 undisputed, because we think that the Board based on what is before it of an

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1 undisputed nature is more than enough to find under the prevailing case law
2 from the Federal Circuit and the Board's own decisions in other cases that
3 the TuffStuff manual and TuffStuff website were publicly accessible prior
4 art.

5 The first thing, as I'm showing here on slide 6 for the benefit of
6 Judges Goodson and Hoskins, ICON does not dispute that the PDF manual
7 was online as of December 26, 2010 at that displayed internet address.
8 ICON doesn't dispute that that was part of a known fitness company's
9 website, and ICON doesn't dispute --

10 I'm sorry, Your Honor, go ahead.

11 JUDGE GOODSON: Where's the evidence that that was a known
12 fitness company?

13 MR. McBRAYER: That the TuffStuff Company had a website
14 and as I think -- I don't have a particular paragraph number and I can get it
15 for Your Honor, if necessary, but Mr. Rawls testified -- I'm sorry, for hitting
16 the microphone, Your Honor -- that the TuffStuff Company had a particular
17 number of products. And if you look specifically at the web page, you've
18 got their kind of line-up of products that you can find and that they
19 maintained an internet web page presence to sell these many products.

20 Does that answer your question, Your Honor?

21 JUDGE GOODSON: That would be a helpful paragraph from the
22 Rawls declaration if you can find that. You don't have to stop what you're
23 doing right now, but that would be --

24 MR. McBRAYER: I'll try and return to the paragraph on rebuttal,
25 Your Honor. But the fact that the manual was undisputably publicly

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1 available and that we've got the Butler declaration from the Internet Archive
2 who's the same gentleman that the Board has accepted before declarations
3 from to prove the public accessibility of particular web pages on a particular
4 date, those two things alone cause these -- this set of facts to fall squarely
5 within the set of cases that we have highlighted for the Board that are
6 existing PTAB cases, the Samsung case, the Mitsubishi case and the AMD
7 case, in particular, I wanted to discuss with Your Honors.

8 In the Mitsubishi case, the PTAB found that these two facts alone
9 were enough to prove public accessibility in a final decision. So the
10 Mitsubishi case was a final decision where the Board found that a Wayback
11 Machine declaration from the Internet Archive from Mr. Butler, plus the
12 dates on the documents, those two things alone were enough to establish in a
13 final decision the public accessibility of the documents, and that's exactly as
14 I'll get into more detail here what we have before the Court today.

15 In the Samsung --

16 JUDGE GOODSON: But in the Mitsubishi case, isn't it true that
17 the Patent Owner didn't contest the sufficiency of the Petitioner's evidence
18 on that point of public accessibility?

19 MR. McBRAYER: Yes, Your Honor, but now we get into the
20 difference between burdens of production and burdens of persuasion. In the
21 Samsung case and the Mitsubishi case -- your point, Your Honor, is also the
22 same in the Samsung case and it's a good one, that in those cases the Patent
23 Owner did not contest at the hearing whether those two pieces of evidence,
24 the declaration from the Internet Archive and a date stamp on the document,
25 were enough.

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1 But at that moment the Board faced a decision nonetheless about
2 whether the Petitioner had met their burden of production to provide
3 evidence to the Board that the document was publicly accessible. Did they
4 cross some minimal threshold for a final written decision to prove public
5 accessibility?

6 Now, as we all know being former trial practitioners or trial
7 practitioners now, that a burden of persuasion may be greater and in that
8 instance the Patent Owner did not fight that battle between the burden of
9 production and the burden of persuasion, and the Board went ahead and
10 found that those -- that that combination of evidence from the Internet
11 Archive and in the case of the Mitsubishi case, the date stamp on the
12 document was enough.

13 And what's important here today is that in providing this evidence,
14 and again it's uncontested, we're over the burden of production. We can
15 fight about, Your Honor, Judge Goodson, we can fight about the burden of
16 persuasion if we want, and I will speak in a moment about why this is the
17 right result about why you should be persuaded that this, indeed, was
18 accessible to members of the art and to people who wanted to inquire about
19 the art of fitness machines at the time, but that --

20 Because we have met the burden of production, that goes back to
21 Your Honor's earlier point that whether TuffStuff was a well-known fitness
22 company or not, that certainly might go to whether people actually would
23 have found it or not, but it's not necessary for the burden of production to
24 meet our burden with respect to public accessibility. We have done that by

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1 providing facts and uncontested facts to the Board that are 100 percent in
2 line with the Mitsubishi and Samsung cases.

3 JUDGE GOODSON: So just to make sure I understand the
4 evidence that's in the record, as I understand, the evidence in the record
5 regarding the public accessibility of the Six-Pack reference is the Butler
6 affidavit. That's the only evidence; is that correct?

7 MR. McBRAYER: Mr. Rawls spoke briefly to the fact, and this is
8 cited in our brief, that this is the kind of evidence, the product manual, that
9 people of ordinary skill in the art would have looked to. It's the type of
10 document that would have been informative to a person of ordinary skill in
11 the art. But as to whether or not they would have gotten it by going to the
12 website, Mr. Rawls we concur, Your Honor, did not testify about that.

13 JUDGE GOODSON: Well, if I'm looking at the paragraph in the
14 Rawls declaration that you're referring to, it's paragraph 96, it says, The
15 manual is a printed publication that a skilled artisan would reasonably have
16 relied upon in understanding the design, functionality and operation of the
17 Six-Pack trainer. As I understand that, he's just saying this is the kind of
18 manual that a person of ordinary skill would look to, to understand how this
19 actual device would operate. He's not testifying about whether this was
20 publicly available.

21 MR. McBRAYER: You're right, Your Honor, whether you would
22 have -- to get it in the first place whether you would have gone to that
23 website. I concur in your interpretation of that, Your Honor. But, again, I
24 want to go back to the difference between the burden of production and the

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1 burden of persuasion, because I wanted to start with, Your Honor, what is
2 undisputed and bedrock for the Board here today.

3 What the Mitsubishi and Samsung cases stand for is that the
4 Wayback Machine/Internet Archive declaration and in the case of
5 Mitsubishi, if you add to it the document date stamp, those as a matter of law
6 meet our burden of production, otherwise you would be saying -- you would
7 have to say that the Mitsubishi and Samsung cases were wrongly decided,
8 right? Even though it was undisputed, the Board still had an obligation to
9 only find that in a situation where the Petitioner bore the burden there, right,
10 only find obviousness and only find that something was prior art if sufficient
11 facts were before them regardless of any dispute.

12 So if what we put before you is not enough to establish a burden of
13 production, the only way you can get to that is to say that Samsung and
14 Mitsubishi were wrongly decided.

15 JUDGE GOODSON: I'm not sure I agree with that because you're
16 equating the fact that it was undisputed with not presenting an issue as to
17 whether the burden of production was satisfied. In other words, if
18 Mitsubishi had presented a situation like here where the Patent Owner didn't
19 present its own evidence, its own affirmative evidence or, you know,
20 rebuttal evidence on public accessibility, but still challenged the Petitioner's
21 showing -- the sufficiency of the Petitioner's showing, then I could
22 understand how this case is on all fours with Mitsubishi, but they didn't -- the
23 Patent Owner in Mitsubishi didn't challenge it at all, so I don't think it
24 necessarily stands for the proposition of law that the Wayback Machine is
25 sufficient to meet the burden of production.

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1 MR. McBRAYER: I don't think it's -- Your Honor, it doesn't hold
2 that, but that's the proposition of law that we think is implied by the finding
3 and importantly necessarily implied. Let me draw an analogy for you. It's
4 no different than our burden here today with respect to patentability.

5 ICON hasn't contested patentability, right? But we come to the
6 Board and we still say that Your Honors have the duty here today to decide
7 whether the references I've put before you and we have put before you
8 satisfy every claim limitation and would have been combined in ways that
9 were obvious. You know, it would have been obvious and motivated for a
10 person of ordinary skill in the art to do that.

11 If I fall down in that respect, Your Honors are still obligated, even
12 though they haven't contested it, to not find obviousness. ICON has argued
13 that as a matter of fact that we still bear the burden of proof and if for some
14 reason you're not persuaded, Your Honors have the obligation, if there's a
15 hole in our evidence, to shoot down that particular argument.

16 So if you decide that -- if this Board were to decide that a
17 particular ground proved the non-patentability of particular claims, what that
18 is implying is I had enough evidence on every single ground and enough
19 evidence on motivation to combine for Your Honors to make that decision,
20 otherwise it would be wrong for Your Honors to make that decision.
21 Regardless of whether it's contested, that's what a burden is. I have to show
22 up here in this Court with evidence to get over the threshold, right?

23 And in Mitsubishi, Your Honor, Judge Goodson, that's what
24 happened is they had to get over that threshold and regardless if Patent
25 Owner didn't contest it or not, the Board was under an obligation not to find

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1 that to be publicly accessible prior art if, in fact, it didn't get over that
2 threshold. That's why we think it stands for that proposition that that's
3 enough to get over the threshold.

4 Now, I want to persuade you today beyond that, that this is the
5 right result, right? And if I can turn to that, right, because that's really what
6 we think should be at issue today and why we think that Your Honors should
7 find in Nautilus' favor is this is the right result.

8 What you have is a fitness industry manual. Let me just focus the
9 Court's attention without slides and I'm going to black out my slides here in
10 the courtroom for Judges Goodson and Hoskins and not refer to a slide.
11 You've got a fitness company posting a products page. That's what the
12 evidence is, is, you know, a fitness company posting a products page.

13 And we can get into a debate about whether this is a well-known
14 fitness company or not, but I don't think it's disputed that TuffStuff was a
15 fitness company because Your Honors have the product web page. It's
16 undisputed that the manual is online at a website called TuffStuff Fitness,
17 right? That's -- there's more than enough evidence and I think proper and
18 right for Your Honors to find that this was online at a fitness company
19 website and that other people in the art would have looked to that website.

20 Let me give you an example.

21 JUDGE HOSKINS: Mr. McBrayer, what evidence do you have?
22 So the standard here is not simply whether it was available on the website.
23 It's whether a person of ordinary skill exercising reasonable diligence during
24 a search would find the website. Do you agree with that in terms of the
25 standard to be applied here?

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1 MR. McBRAYER: I'm not sure that the standard would find it.

2 It's if they're interested that they could reasonably find it.

3 JUDGE HOSKINS: Exercising reasonable diligence.

4 MR. McBRAYER: That's right, yeah, exercising, but it's the
5 difference between if you exercise reasonable diligence and you're a person
6 of ordinary skill in the art wanting to inquire in this area, could you find it or
7 would you definitely find it?

8 JUDGE HOSKINS: I understand. I appreciate the distinction. So
9 what evidence do you have in terms of exercising reasonable diligence, why
10 it is that a person of ordinary skill in the art could have found this as part of
11 exercising reasonable diligence?

12 MR. McBRAYER: I think two things, Your Honor. First, as we
13 keep pointing out, it's a fitness company website and we don't think that's
14 disputed. We think that the nature of the evidence by itself is enough for
15 Your Honors to find that this was a fitness company selling fitness products,
16 right? Just look at the evidence. It's a conclusion that the Court can draw
17 from the evidence itself.

18 Secondly, Your Honor, that the Wayback Machine itself indexed
19 this web page, right? That it was out there and it wasn't part of the dark
20 web, it wasn't an inaccessible part of the web. You've got the Wayback
21 Machine indexing it. That says something about the presence of TuffStuff
22 on the internet being at a level high enough that at least the Internet Archive
23 was able to find an archive, this website.

24 Now, you don't have -- you've got cases out there, some of them
25 that ICON cites, some of them that we cite about whether or not the page

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1 was indexed by a commonly known search engine. That proof is not here,
2 but we think that the nature of the website that it's a fitness -- that it's a
3 fitness company obviously selling products in this space and the fact that the
4 Internet Archive found it are enough, in addition to just it being the right
5 result, again, Judge Hoskins. Let me give you a couple examples that speak
6 to that.

7 JUDGE GOODSON: Could I ask you a question about what it
8 means to be indexed by the Wayback Machine? Is there any evidence in the
9 record to tell us what it signifies that the Wayback Machine was able to
10 access this?

11 MR. McBRAYER: I'm not quite sure I understand Your Honor's
12 question, but let me give it a shot. Mr. Butler testified about the Wayback --
13 about the Wayback Machine. I call it the Wayback Machine. It's also
14 known as -- I view those as interchangeable with the Internet Archive, so I
15 apologize if I've confused anybody. But he testifies about the Wayback
16 Machine and how it archives websites. I don't believe he testifies about it
17 archiving or not archiving certain websites and how it might make a choice.

18 JUDGE GOODSON: Okay. Yeah, I was just following up
19 because you mentioned that the fact that the Wayback Machine captured this
20 site was an indication that it was accessible or available through a reasonable
21 search, and I don't know how we can deduce from the record that the capture
22 by the Wayback Machine signifies anything about its availability through a
23 normal search.

24 MR. McBRAYER: Except it wasn't a hidden web page, Your
25 Honor. Is Your Honor familiar with the term dark web? Is that something --

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1 JUDGE GOODSON: I've heard of it, but again we don't have
2 information about -- we don't have evidence in the record here about, you
3 know, whether sites that are protected by a password or things that are not
4 publicly available are not captured by the Wayback Machine.

5 MR. McBRAYER: Well, the Wayback Machine has captured it is
6 evidence that it was available to members of the public, right? The
7 Wayback Machine -- there's no evidence to the contrary either that the
8 Wayback Machine is, for instance, capable of inputting passwords or
9 capable of getting behind a company or governmental firewalls to get at
10 documents that aren't part, so you don't have the opposite either.

11 What I'm trying to get to, Your Honor, is that the right result here
12 is to look at the evidence and draw the inference that Your Honor is talking
13 about, because you don't have the opposite evidence either. Like ICON isn't
14 standing here saying like this website was password protected, therefore, it
15 wasn't available.

16 You also -- this also is a good time to bring this up, Your Honor.
17 This also isn't the situation that was -- that existed in a lot of the cases that
18 ICON points to and that the Federal Circuit has dealt with before regarding
19 what one might think of as obscure prior art. This is not a thesis in a
20 Russian library, not indexed in any sort of card catalog. Okay. This is not --

21 JUDGE GOODSON: The Federal Circuit cases that we have from
22 the parties, they don't specifically reach this issue or this fact pattern and I
23 was wondering if you knew of any cases that are directed towards websites
24 of a commercial venture.

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1 MR. McBRAYER: Your Honor, certainly the Voter Verified case
2 that we cited relates to industry, right? There you had an article that was
3 posted in risk -- on the Risk Digest website and I cite the Voter Verified case
4 because it relates to industry, not a library or some thesis or it's not academia
5 and it's not government. It's an industry, a commercial website called Risk
6 Digest and the paper at issue was posted there.

7 JUDGE GOODSON: But it was uncontested in that case that the
8 Risk Digest was known to ordinarily skilled artisans. That's not a fact that's
9 presented here.

10 MR. McBRAYER: Your Honor, I agree. I only note, though,
11 Your Honor's question was about whether it was a company industry
12 website, right? And that was a case where it was.

13 Voxx -- let me go back also to the Voxx case because I'm looking
14 at it right now. In that case there was -- even though that was an institution
15 decision, not a final decision, the Voxx case highlighted and properly
16 distinguished the cases that ICON relies on, these academic cases where, for
17 instance, in the ServiceNow case where the website link proved that the
18 document postdated the priority date.

19 Another case that ICON cited was the Blue Calypso case. That
20 was an undergraduate thesis, an individual person's website. Like, Your
21 Honor, I have kids in college right now. My 19-year-old son's personal
22 Facebook page, even though he's an engineering major, would not be
23 reasonably or public accessible to a member of skill in the engineering art.

24 Like an individual undergraduate page, that's just of a different and
25 obscure nature than what we have here and what Your Honors can and we

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1 believe should, the inferences you should draw from the evidence that's
2 before you. You know, we admit and, as I was speaking with Judge
3 Goodson about, that Mr. Rawls did not testify that this TuffStuff web page
4 was known or that it was widely frequented, it was the most well-known
5 fitness company on earth.

6 There's nothing like that in the record, but there's enough in the
7 record for you to draw inferences and this is the right result. We don't think
8 that there's any dispute here that this was an industry participant, you know,
9 a company selling more than a dozen fitness machines in the industry. That
10 from the TuffStuff web page is really not disputed, and that the manual was
11 online and it was the kind of document that people would rely on.

12 Your Honors have enough now to draw the inference that this was
13 publicly accessible, right? And we think that's the right result when you've
14 got an industry website from an industry participant posting their product
15 manuals on the internet that is publicly accessible to other members of the
16 industry. We think that, as I've said, is the right result. This case is a lot
17 more.

18 Even though we don't have a case that deals squarely with these
19 facts, but this case is a lot more like Mitsubishi and Samsung and AMD, like
20 Voter Verified and Voxx, then it is about the undergraduate website or the
21 obscure uncatalogued thesis in a library and the other cases that ICON relies
22 on, and Your Honors can draw the inferences that we've asked and reach
23 with respect to this publication the right result here.

24 JUDGE GOODSON: Mr. McBrayer, I think you're through your
25 time, but I did have a few more questions for you. Did the Petitioner make

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1 any efforts after institution to develop the factual record on the issue of the
2 Six-Pack reference's availability?

3 MR. McBRAYER: There's no supplemental evidence in the
4 record, Your Honor. I'm sorry, I'm getting an echo here in the room.

5 JUDGE GOODSON: And why not?

6 MR. McBRAYER: Your Honor, the reasons why are complicated
7 and of a nature that I don't think the Board would find it persuasive one way
8 or another. Let's just say it's for internal reasons that evidence was not
9 developed. I acknowledge that, Your Honor, but here we are in this
10 situation where I understand the Board wants more evidence, right?

11 You, in some way, understandably feel like we didn't lay this out
12 on enough of a plate for you and we admit that we could have, right, I mean,
13 that to provide supplemental evidence or to provide a Rawls declaration that
14 said TuffStuff was a very well-known fitness company, right?

15 I understand that Your Honors are a bit uncertain about the
16 evidence that has been placed before you, but what I am suggesting here and
17 urging you to do is to find your way to the right result that it's undisputed
18 this was a fitness company, it's undisputed that their website was posted for
19 the public, it's undisputed that their products were posted for the public and
20 it's undisputed in that they were selling more than a dozen products. That's a
21 fitness company of a size that, you know, would be noticeable and known.

22 These are inferences that the Board can draw. I acknowledge that
23 the plate of evidence before you is not perfect. But just like judges for the
24 entirety of our republic have been faced with doing is finding the right result
25 and being able to draw inferences from that or not, but to find the right result

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1 given the evidence that's before you, that's what triers of fact do every day in
2 this country and that's what we're asking you to do here today is that you've
3 got enough to know that this was a fitness company selling products like this
4 and that their products were undisputably posted on the internet in detail as
5 we've shown you for others to see.

6 JUDGE GOODSON: Okay. Thank you.

7 MR. McBRAYER: Thank you, Your Honor.

8 MR. SMOOT: Your Honors, my computer has gone to sleep. I
9 can move forward without slides. And if it comes up, we'll bring those over,
10 but I think we can move forward fairly quickly.

11 JUDGE GOODSON: Mr. Smoot, just before you begin,
12 housekeeping-wise Mr. McBrayer used 29 times, so we -- I'm sorry, 29
13 minutes, so we will plan to give you 29 minutes as well and you can still
14 reserve the five minutes that you wanted, so just keep that in mind.

15 MR. SMOOT: One housekeeping question, is Mr. McBrayer
16 going to be given rebuttal time?

17 JUDGE GOODSON: Well, he still has a minute of time, so, yeah,
18 he'll still have the opportunity to give rebuttal if he wants to.

19 MR. SMOOT: Perfect. Your Honors, the issue here is very, very
20 simple and straightforward and the question is this: Petitioner bears the
21 burden under a preponderance of evidence to establish all propositions
22 related to unpatentability in an IPR proceeding. Petitioner provided one
23 declaration from Mr. Butler describing how the Wayback Machine worked
24 and saying that the attached exhibit was there on the Wayback Machine.
25 That's the only evidence in the record. And the question is, is that enough

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1 for the Board to find that this reference was publicly available, and it's our
2 position that according to the case law that's not enough.

3 JUDGE GOODSON: Is it correct that the sole contested issue in
4 this 1363 case is the public availability of the Six-Pack reference?

5 MR. SMOOT: Yes, Your Honor, that's correct. As was noted,
6 we're not necessarily admitting that all of the claims are invalid. We feel the
7 Petitioner needs to meet their burden. But in terms of the contested issues
8 that we'd like to address today, yes, Your Honor, that's the sole contested
9 issue that we'd like to address.

10 JUDGE GOODSON: Okay. Thank you.

11 JUDGE WORTH: On that, I'm trying to determine what is
12 contested and what is not contested. Are you contesting the authenticity of
13 the web page that was captured?

14 MR. SMOOT: I don't think that we're necessarily contesting the
15 authenticity. We think the broken URL is pertinent. The declaration of Mr.
16 Butler says this is the way that the URLs are captured, here's the way that it
17 should show up in a footer and, as we noted in our Preliminary Response, is
18 we went to that URL that was attached in the exhibit. The URL was broken.

19 The Board noted that in their poking around on the Wayback
20 Machine, they were able to find what they believe was the complete URL,
21 but again we don't know if that was the case. A corrected declaration wasn't
22 submitted as supplemental evidence. The only evidence in the record is still
23 the record with the broken URL. But as Petitioner noted in their briefing,
24 that was for the product page, not for the PDF manual.

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1 But that's correct, we're not necessarily -- or let me put it this way:
2 Even if the authenticity was established, we feel like the evidence in the
3 record is not sufficient to establish that the TuffStuff manual was a printed
4 publication.

5 JUDGE WORTH: So you are only disputing the URL for a
6 product page, but not for a PDF.

7 MR. SMOOT: Correct, Your Honor.

8 JUDGE WORTH: Are you disputing whether what was captured
9 is coherent? Are you alleging that a picture would not have been with text
10 or that --

11 MR. SMOOT: No, Your Honor, nothing along those lines. What
12 we're saying is this: Even if -- you know, let's take some assumptions that
13 we're not necessarily conceding, but if this were true, this is still our
14 position. If Mr. Butler's declaration was true, there's no question about
15 anything that he said. If the URL was unbroken, if it had the correct URL
16 that presumably the Board found -- whether or not that's the correct, we don't
17 know, but presumably if it was correct that that was the correct URL.

18 We still have the position that just because something is on the
19 internet and the Wayback Machine found it does not establish that it's
20 publicly available for the purposes of establishing something as a printed
21 publication. Again, as Judge Hoskins pointed out, the standard is whether a
22 person of skill in the art exercising reasonable diligence could have found it,
23 and the mere fact that it's on the internet does not establish that.

24 And I think the most telling case that Petitioner did not address is
25 the Activision Blizzard case in which there was the exact same Butler

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1 declaration, the generic declaration, and as Mr. McBrayer noted it was a
2 student website, a master student, but it was found by the Wayback Machine
3 and the Board said that there was no evidence that it was ever indexed.
4 There was no evidence that it was ever accessed by anyone. There was no
5 evidence that it was actually in that sense publicly accessible.

6 Sure, the Wayback Machine found it, but the Wayback Machine
7 has found, according to Mr. Butler's declaration, 450 billion other websites.
8 That's sort of a needle in the --

9 JUDGE GOODSON: Well, a factual distinction from Activision
10 Blizzard is that here we're talking about a website on a manufacturer's site
11 that's dealing with a commercial product. That's a different scenario than a
12 report on a university computer science department website. Would you
13 agree with that?

14 MR. SMOOT: Not necessarily, Your Honor. I guess my concern
15 is this: We have no information about how well-known of a company
16 TuffStuff Fitness is. And, in fact, in the Activision Blizzard case there was
17 evidence, there was expert testimony that said, look, if you were looking for
18 art in this space, you would go to the personal web pages of researchers in
19 this field and so this is the sort of website you would go to. There's no
20 evidence like that in the site. There's no evidence even that you would go to
21 fitness company websites to look for this.

22 Now, Petitioner asked you to infer certain things based on the
23 evidence and try and kind of find your way there as he says, but there's no
24 evidence of how well-known of a company this is. I don't see how that's any
25 different than a researcher, say a computer science web page for a

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1 university, some fitness company. In my mind they're very analogous.
2 They may both contain pertinent information and in Activision Blizzard
3 there was actually evidence of an expert saying that these are the sort of web
4 pages you would go to.

5 JUDGE GOODSON: Do you agree that the TuffStuff website was
6 public?

7 MR. SMOOT: What do you mean by public, Your Honor?

8 JUDGE GOODSON: Available without restrictions such as
9 passwords. It was accessible by anybody using the internet.

10 MR. SMOOT: I don't know, Your Honor. There's no evidence
11 that says one way or the other. Like you said, we know the Wayback
12 Machine found it, but it's found 450 billion other websites. So in some
13 aspect of its crawling the Internet Archive, it did hit the TuffStuff Fitness
14 site, but whether it was public or not, we don't know. There's no evidence
15 one way or the other.

16 JUDGE WORTH: Petitioner said that the information was
17 indexed on the Wayback Machine, so isn't that a way to find it using that
18 index?

19 MR. SMOOT: Petitioner said the Wayback Machine was indexed?
20 I'm not aware of any evidence that says the Wayback Machine is indexed.
21 As the Butler declaration states, the Wayback Machine is searchable only by
22 a URL, so you have to know the exact address to type into the Wayback
23 Machine to go anywhere on the Wayback Machine.

24 You can't go to the Wayback Machine -- my understanding is you
25 can't go to the Wayback Machine and search by keyword or by author. It's

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1 URL searching. You know, okay, I want to look for TuffStuff Fitness dot
2 com backslash, yada, yada, yada, whatever it was to get to the PDF. If you
3 know that exact URL, you can type it in and get there, but you can't go in
4 and search it by indexed material is my understanding. There's nothing in
5 the Butler declaration that says it was indexed.

6 And then your question is a good one, Judge Worth. In the Blue
7 Calypso case, the sort of lone Federal Circuit case aside from Voter Verified
8 here, the Federal Circuit said indexing is an important question related to
9 these online documents, and there's no evidence that this was indexed. You
10 know, as Petitioner noted, there's a variety of things they could have done.

11 They could have gotten a declaration from anyone who received
12 the TuffStuff Fitness device, anyone from the TuffStuff Fitness company
13 from any search engine who had indexed this and said, yes, this has been
14 indexed, it would be searchable and findable. There's any of a host of things
15 that they could have done and the Board invited them to do in their
16 Institution Decision. The Board said this is a preliminary showing sufficient
17 to institute trial so that we can develop the record, and there was nothing that
18 was done.

19 JUDGE GOODSON: Why doesn't the TuffStuff site listing
20 assembly manuals or user manuals for the product, the products which
21 included, you know, a few dozen exercise machines, how come that doesn't
22 count as an indexing of the user manual for the Six-Pack trainer?

23 MR. SMOOT: So, Your Honor's, question is if there's a product
24 page, how come you can't find it that way?

25 JUDGE GOODSON: Well, yeah, I'm sorry, go ahead.

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1 MR. SMOOT: Okay. So I guess the question is, well, how do you
2 get to the product page, how do you know to go to the product page? We're
3 still stuck with the same problem, right? There's no evidence that that page
4 was indexed or searchable, no evidence that that was the sort of website that
5 people of skill in the art would go to, to get this sort of information. We still
6 have the same problem.

7 Like I said, even if the URL wasn't broken and that product page
8 was what Petitioner purports, there's no evidence to allow us to find that,
9 yeah, it was well-known or this is where persons of skill in the art would go.
10 There's no evidence in the record for us to find that or to get there.

11 JUDGE GOODSON: But there's no contrary evidence in the sense
12 of, you know, the Patent Owner didn't put on its own declarant saying that,
13 you know, they hadn't heard of TuffStuff, even though they were someone
14 who is familiar with exercise equipment. There's no contrary evidence as to
15 the -- whether anybody knew of the TuffStuff brand or the TuffStuff
16 website, correct?

17 MR. SMOOT: Well, Your Honor, in deposition Mr. Rawls was
18 asked whether or not -- or when he had accessed the TuffStuff Fitness
19 manual the first time he'd seen it, and he indicated the first time he'd seen it
20 was in this case. He received it in an E-mail. He had never gone to the
21 website to access it. The first he'd seen it was in this case.

22 JUDGE GOODSON: That was as to the Six-Pack trainer manual,
23 but was he asked about whether he had heard of TuffStuff, the brand, or
24 TuffStuff as a source of equipment?

25 MR. SMOOT: I don't believe he was asked that, Your Honor, no.

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1 JUDGE GOODSON: Okay.

2 MR. SMOOT: To speak briefly to the Voter Verified case, as
3 Your Honors noted, one of the main distinguishing facts in that case, the
4 only other Federal Circuit case really on point was that that was an
5 acknowledged location for persons of skill in the art to find relevant
6 information. There were hundreds of articles published in the pertinent art
7 on that website, and so that's why the Federal Circuit found that that was
8 enough information to get there.

9 And in terms of Petitioner's other cases, Your Honors have already
10 noted the issues that we identified with those, namely the -- either it was a
11 completely uncontested issue or there was other evidence in the record. I
12 believe it was the AMD case. One moment, Your Honors.

13 Yes. In the AMD case there were IDSs prior to the critical date
14 that had cited the reference at issue, and so the Board relied on that other
15 evidence to say, look, this was at least accessed by someone who felt like it
16 was pertinent towards patentability on something related and it was cited in
17 an IDS to the Patent Office, so that's some evidence that it was publicly
18 available, evidence that it was out there. So there's something else for us to
19 hang our hat on besides just the generic declaration of Mr. Butler that says
20 here's how the Wayback Machine works, this came from the Wayback
21 Machine, and right now that's the only evidence in the record.

22 Petitioner has asked you to try and find the right result, and our
23 concern is that the right result here is that we not open the floodgates of, you
24 know, anything that's on the internet. As long as you get the generic Butler

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1 affidavit, boom, you've established public availability, it's a printed
2 publication, there's nothing else you have to do. There's no other factual --

3 JUDGE GOODSON: Well, I mean, it's not simply the Butler
4 affidavit that I think they're relying on. It's also the fact that it's a fitness
5 equipment maker and this is a case about fitness equipment. I want to ask
6 you the same question I asked them. Are you aware of any cases addressing
7 the public availability of a document that's available on a commercial
8 website?

9 MR. SMOOT: Aside from what we've talked about, Your Honor,
10 no. The cases that seem to be most on point, as I articulated, were those
11 faculty websites, right? And, like I said earlier, in my mind a faculty
12 website where there's evidence in the record that says if you're looking for
13 evidence in this area, persons of skill in the art would know to go to
14 researchers in this area, personal websites to find information, and that with
15 the Butler declaration was not enough. It seems to be pretty analogous to
16 this case where, yeah, maybe it is a fitness website, but there's no evidence
17 that persons of skill in the art would have gone to those sort of websites.

18 In summary, we feel that Petitioner has not met their burden here.
19 Again, it's a preponderance of the evidence by which they need to establish
20 every supposition related to unpatentability here, including whether or not
21 the TuffStuff Fitness Manual was publicly available and that's a printed
22 publication, and it's our position that they have not met that burden and we
23 feel like finding the generic Butler affidavit alone establishes public
24 availability would be the wrong result. Thank you.

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1 JUDGE GOODSON: Thank you. We'll turn it back over to Mr.
2 McBrayer for rebuttal and you have one minute left. If you need some more
3 time, we can be generous given all the questions that I had specifically.

4 MR. McBRAYER: Your Honor, I can do this. First of all, I
5 wanted to correct myself with respect to a question that Judge Goodson
6 asked me earlier, which was why we didn't submit any supplemental
7 evidence. My colleague reminded me that ICON did not object to the
8 admissibility of these documents, so it didn't object to the authenticity of
9 them, so it didn't submit objections to the Butler declaration. It didn't depose
10 Mr. Butler. It didn't do anything else that would have triggered our ability to
11 submit supplemental evidence. We had no right or ability to do that under
12 the procedural rules. I suppose we could have petitioned the office for
13 something special, but there was no triggering event that allowed us, Judge
14 Goodson, to submit that supplemental evidence.

15 Again, that doesn't take away -- I understand the Board's concern
16 here and your hesitance. I acknowledge it fully that the plate of evidence
17 before you requires you to draw inferences, but we think that's what you
18 should do and we ask you to do that. That's the right result.

19 Lastly, as to the nature of TuffStuff, let me invite the Court's
20 attention to a couple of facts about the company web page. It's a company
21 web page that offers distinct sections. It's got products and a support
22 section. It has 50. We've been tossing around numbers. But if you go to
23 that web page, it's got 50 different fitness products listed on that page and
24 that -- from that Your Honors can and should draw an inference that this was

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1 a fitness company of at least some meaningful size that people would know
2 about it, right?

3 If they were selling one, if this was a website of someone who
4 made stuff in their garage and they had one obscure fitness machine, Your
5 Honors might not draw that inference, but here we have a company with a
6 full slate of 50 products with an organized web page that divides its web
7 page into a home page and a products page and a support page. It has a
8 search functionality there, you know, on the web page itself. That's enough
9 to draw the inferences that we're asking you to draw to reach the right result.

10 The example I was going to draw earlier is if this were Ford versus
11 Chevrolet fighting about some automotive patent and whether or not features
12 of automobiles would have been combined, and the Petitioner we imagine
13 were Ford were relying on a company website, automotive company X that's
14 selling 50 different cars, we wouldn't be having this debate, right?

15 And what that means, if Your Honors agree with me there, that if
16 there was some company X out there, maybe without a big marketing budget
17 but were selling 50 cars and had a website for that, if Your Honors'
18 inclination there is that, yeah, you're right, we wouldn't -- if this were Ford
19 versus Chevrolet and the prior art evidence were of some company X with
20 50 -- with a web page with 50 different cars on it, then what that is telling
21 Your Honors internally is what we're asking you to find is that there's a
22 drawable and reasonable inference there, that it's more likely than not that a
23 company with that kind of presence and with that kind of product lineup,
24 again undisputed, would be known and would be the kind of website that a

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1 person looking for art in this area to Judge Hoskins' earlier question would
2 find that or could find that, right?

3 And that's the inference we're asking you to draw here. We think
4 it's reasonable. We think it's more likely than not, well more than that, but
5 we think it's more likely than not from the evidence before you, the industry
6 web page with that many products organized in the way that it is with a
7 search bar is -- shows that this was publicly accessible to members of this
8 art.

9 Thank you, Your Honors.

10 JUDGE GOODSON: Thank you. Any final thoughts from you,
11 Mr. Smoot?

12 MR. SMOOT: Yes, Your Honor, very briefly. So Petitioner says
13 if there was a website with one, that may not be enough, but with 50 that's
14 surely enough. That seems like a really unreasonable standard. It seems like
15 a really bizarre line to draw. We think the bottom line is that the burden has
16 not been met. We think Blue Calypso stands very strongly for this
17 proposition. If it hasn't been indexed, that's an important question.

18 There's no evidence of anything along those lines. There's no
19 evidence that it is this great fitness company that Mr. McBrayer is talking
20 about. There's just no evidence of that, and that's our real problem here,
21 Your Honors, is that we feel that finding for Petitioner here opens the
22 floodgates for Petitioner to throw up a single piece of evidence and then
23 wave their hands and ask the Board to bail them out and we feel like, Your
24 Honors, that's not the right result here. Thank you.

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1 JUDGE GOODSON: Okay. Thank you, Mr. Smoot. That
2 completes the argument for the 1363 case. So I think we will take a short
3 break and then we'll come back and address the 1407 and 1408 cases.

4 **(A brief recess was taken.)**

5 JUDGE WORTH: Okay. We're going to go back on the record
6 now and we're going to keep the transcript running, but we're going to turn
7 now to cases IPR2017-01407 and 01408 that relates to Patent 9,616,276 B2.
8 The parties are the same, Nautilus, Inc. and ICON Health & Fitness, Inc.,
9 Patent Owner.

10 Just to be clear, are we -- are the parties satisfied with the 60
11 minutes, 60-minute distribution now?

12 MR. McBRAYER: Yes, Your Honor.

13 JUDGE WORTH: And did -- I understand that both parties are
14 going to reserve time. Petitioner, how much time would you like to reserve?

15 MR. McBRAYER: Your Honor, I'd like to reserve 25 minutes
16 because I anticipate that there are some issues where the Patent Owner is
17 going to argue first, for instance, with respect to the Motion to Exclude
18 where we may need some more significant time, you know, reserved, so I'd
19 like to split it 35/25 if I may.

20 JUDGE WORTH: Okay. And Patent Owner?

21 MR. SMOOT: Yeah, we would like to reserve 15 minutes.

22 JUDGE WORTH: Okay. The clock is set for 35 minutes. Again,
23 thank you for bearing with us while we took a break. It's a long hearing
24 today for us. And you may begin when you're ready.

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1 MR. McBRAYER: Thank you, Your Honor. It's a lot of time to
2 listen to lawyers talk. I understand.

3 In 1407 and 1408, Your Honors, we're in the same situation as in
4 1363 in that we presented our petitions and made arguments for
5 unpatentability and ICON did not argue regarding those grounds. So what
6 the Board has now are -- is a petition with the following that we think is
7 undisputed, again, all fitness machines, all known components being
8 combined in known ways to reach predictable results. As a threshold matter
9 under KSR, that's the very definition of obviousness.

10 But also in every instance and for every ground at issue in 1407
11 and 1408 you have additional evidence from the experts and in the record
12 from which you can and should conclude that a person of ordinary skill in
13 the art would have been motivated to combine those references, those fitness
14 machines, in exactly the ways that we talked about.

15 JUDGE WORTH: Did you get anything in response to our
16 decision on institution with respect to the newly instituted grounds?

17 MR. McBRAYER: No, Your Honor.

18 JUDGE WORTH: Okay. And what is your position on what we
19 should do with the newly instituted grounds?

20 MR. McBRAYER: Your Honor, I will get to that more today, but
21 the difference between pulleys and sprockets in a fitness machine is going to
22 be relevant on the record here about written description, but we think with
23 respect to the original claims that were originally not instituted and that
24 under SAS the Court did institute on those grounds is we would stand on our
25 original Petition.

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1 And our original Petition with respect to those claims was that in
2 an instance where you have inside of a fitness machine a pulley or a
3 sprocket, that those are often viewed by one of ordinary skill in the art as
4 being obvious replacements and we made that argument. Mr. Rawls'
5 testimony supported that argument. The Board found otherwise, but we
6 believe that the original Petition establishes that those particular claims were
7 obvious in light of the record.

8 I would also note however, Your Honor, that the same claims are
9 covered with other grounds as well where Your Honors instituted on the
10 particular ground because it expressly disclosed the required component.
11 There was no leap of obviousness that was required.

12 JUDGE WORTH: Do you disagree with the preliminary claim
13 construction in the decision on institution that there is a difference between a
14 sprocket and a pulley?

15 MR. McBRAYER: For the purposes of this proceeding, we do
16 not, Your Honor. But, again, the differences between being a pulley and a
17 sprocket doesn't necessarily mean so motivated as we described people of
18 ordinary skill in the art being that you wouldn't replace a pulley with a
19 sprocket to satisfy -- in a way that would satisfy the claim construction,
20 right?

21 JUDGE WORTH: Well, let's talk about in your opposition paper
22 you rely on Sawicky and Wu in one ground and in another ground Zhou and
23 Sawicky. I didn't see where you were proposing to replace a pulley with a
24 sprocket there. It seems that -- but please address that.

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1 MR. McBRAYER: Well, Your Honor, with respect to our Reply
2 Brief, there we're dealing the amended claims and we're proposing new
3 combinations and those new combinations that we spoke about were the
4 references that support those other grounds where a sprocket is expressly
5 disclosed in the reference. So we weren't asking the Court in our Reply
6 Brief in finding that the amended claims, if we get there, those are also
7 obvious. We're not asking the Court to make any obviousness findings
8 where a reference disclosed only a pulley and we're suggesting that that
9 pulley would have been replaced with a sprocket just because that was
10 obvious. It wasn't in the reference, but our expert said it would have been
11 obvious. That's not the situation in our Reply Brief.

12 Go back to our original Petition and for some of the grounds at
13 issue we were asking the Court to do that. We think it's still appropriate, but
14 we'll stand on our papers.

15 JUDGE WORTH: And when you say reply, you mean the
16 opposition to the Motion to Amend.

17 MR. McBRAYER: That's correct, Your Honor. Okay.

18 Your Honor, as I was saying, though, for all the original grounds,
19 in every instance you've got additional motivations, both commercial and
20 design reasons why someone would have combined, again, these fully
21 fitness -- you know, fitness machines in the way that we talked about. It
22 would save weight. In some instances it improved durability, it improved
23 safety, it reduced noise. There's more precise control of the resistance, and
24 in some instances there's express teaching.

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1 My point here is, is that you've -- for every instance you start with
2 known components, known ways, predictable results and you have
3 something more. That should be more than enough in an uncontested
4 hearing to find obviousness and we would ask that Your Honors find all the
5 claims unpatentable on all the grounds instituted.

6 Turning to the amended claims because the Court's order asked us
7 in this opening presentation to expressly address the amended claims, I
8 wanted to start with written description, Your Honor, and that's what I'm
9 showing here on slide 39 for the benefit of Judges Hoskins and Goodson.

10 I want to start out with the law of written description, because here
11 this issue right here before the Board is one where the law we think is on
12 point and the federal -- there's Federal Circuit law that governs this situation.
13 I'll discuss each of the cases here in a moment, but it's important in this
14 decision here to really dig into the law of written description.

15 So I want to start with Ariad Pharmaceuticals versus Eli Lilly, and
16 it stands for the proposition that a description that merely renders the
17 invention obvious does not satisfy the written description requirement. The
18 written description is a higher bar. You have to show that you contemplated
19 the invention, not just that you disclosed enough bits and pieces that would
20 have enabled a person of ordinary skill in the art to combine them. Written
21 description is a higher burden, especially with respect as we're going to be
22 dealing here, and I'll show you in a moment with a specific configuration of
23 components.

24 Okay. The next one I want to talk about is the D Three case, and
25 the D Three case, as we highlighted for the Court, was decided during the

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1 course of briefing here in this matter and it re-emphasized that it's not
2 sufficient to just disclose a combination of components that a person of
3 ordinary skill in the art would find to be obvious. Adequate written
4 description does not ask what is permissible, rather it asks what is disclosed
5 and that, Your Honors, is important here today.

6 Some of the other cases we cited I want to talk about now. I want
7 talk and invite Your Honors' attention, and I think that they should be
8 addressed all of them in the written decision because they're all Federal
9 Circuit cases that are on point and relevant.

10 The first is the Novozymes case. We cited this in our brief and we
11 cited to Novozymes on page 1349, and I'll show that to you in a moment.
12 But in Novozymes, the Patent Owner claimed a specific enzyme within a
13 broader class. In a way it's kind of a species/genus case, but claimed a
14 specific enzyme within a broader class and they attempted to rely on bits and
15 pieces of other enzymes in a way that could be combined, but the Federal
16 Circuit found that you can't do that, that when you have that sort of situation
17 you're talking about a specific one, you have to disclose that you had
18 possession of that specific one.

19 And it will only be for the benefit of Judge Worth who's here in the
20 courtroom -- can I please have the Elmo, sir -- but I'm going to show page
21 1349 for the Court here and I'll read it for the benefit of Judges Hoskins and
22 Goodson, but this is the portion that's cited in our brief. It says, the
23 application at issue provided formal textual support for each individual
24 limitation recited in the claim, but it nowhere describes the actual
25 functioning thermostable particular -- I'm paraphrasing now -- enzyme.

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1 Taking each claim as we must as an integrated whole, one searches the 2000
2 application in vain for the disclosure of even a single species that falls within
3 the claim.

4 Novozymes -- it continues on later in the paragraph. Novozymes
5 seeks to derive written description support from an amalgam of disclosures
6 plucked selectively from the application, and that, Your Honor, is what we're
7 dealing with here because we don't have a disclosure of the specific
8 configuration that the amended claims are moving toward.

9 I'll get to that in a moment, but I also want to invite the Court's
10 attention to the TurboCare case, another case that we cited in our brief. And
11 while I'm doing that, could I have the presentation back, please?

12 There was a mechanical case. It related to a seal around a fluid
13 pumping system and the claim described a number of components. For the
14 purposes of this discussion here, let me describe them as components A
15 through L. And there was a spring that was required in the dependent claim
16 that was at issue there, and the spring was described in the specification as
17 being adjacent to component A, which was a ring. And the description was
18 that the invention was having a spring adjacent to component A.

19 Now, component B was also described and component C and D,
20 but what the claims required was the spring not only being adjacent to
21 component A, the spring, but being between components A and B. It had a
22 specific configuration. Everything was disclosed. You know, they
23 undoubtedly disclosed a spring, a ring and this other component, but within
24 the specific configuration they disclosed was the spring being adjacent and

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1 they claimed it being between, and the Federal Circuit held that that's not
2 enough.

3 It might have been obvious to put it between, but with written
4 description you have to show that you have possession at the time of your
5 original application of the configuration you're claiming, and that is exactly
6 what is missing here in both instances of ICON's amended claims that I'll get
7 to. So that's why the TurboCare case.

8 The Agilent case is also important because there in the Agilent
9 case you had several specific embodiments of a fluid-mixing system. It
10 actually related to mixing different things when a film was -- a kind of film
11 was the fluid, but it disclosed two embodiments. It disclosed a closed
12 chamber embodiment and then it disclosed an open-vortexing chamber, and
13 the issue is which one of these two or both of them was it disclosed where as
14 claimed you could use a bubbling system to mix the fluids.

15 So you have two embodiments and then one feature that was
16 disclosed that wasn't necessarily disclosed for both embodiments, and the
17 Federal Circuit held that the description at issue wasn't enough to use the
18 bubbling system with the claimed embodiment, because the claim at issue
19 was related to the closed chamber embodiment and there was no description
20 anywhere in the patent of using bubbles with that one.

21 There was a vortexing system, a different embodiment, and
22 bubbles were disclosed as being used with that, but there was no description
23 in the closed chamber embodiment configuration of using bubbles with it.
24 And the Federal Circuit said as a matter of law that's not good enough, that
25 you have to disclose a specific -- if you're claiming a specific configuration,

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1 you have to disclose that configuration. You have to prove in the written
2 description of the original application that you possessed it at the time, and
3 that's what we're dealing with here and that's why we think the D Three,
4 Novozymes, Agilent and TurboCare really govern this situation.

5 Turning back to my presentation now and the facts that we're
6 dealing with, I'm going to turn --

7 JUDGE HOSKINS: Mr. McBrayer, just one quick question before
8 you do that, please.

9 MR. McBRAYER: Yes, Your Honor.

10 JUDGE HOSKINS: One of the things that Patent Owner says is
11 due to Aqua Products and then another Federal Circuit decision that came
12 out pretty soon after Aqua Products, Petitioner bears the burden in this
13 situation to establish that there is no written description support for these
14 claims. Do you agree or disagree with that?

15 MR. McBRAYER: We disagree with that, Your Honor. I don't
16 think that's been decided yet. I think it's -- let's call it unclear. I'd be happy
17 to address it in more detail in my rebuttal time, but I don't think it matters for
18 today's purposes whether we bear the burden or ICON bears the burden or
19 the Board wants to view it as a burdenless issue, simply because the case law
20 here is we're so clearly dealing with a claim that claims a specific
21 configuration of pulleys and sprockets and they don't disclose that.

22 And we think that regardless of the burden that those cases that I
23 cited compel the result that we're seeking today, both for pulleys and
24 sprockets and with respect to the radio and console, because that's another
25 example of how ICON has got two different applications in the past and

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1 they're picking and choosing, as in Novozymes, an amalgam of those
2 components with no description anywhere that shows the components in the
3 combination and configuration that they're now claiming.

4 JUDGE HOSKINS: Thank you.

5 MR. McBRAYER: Okay. I'm now looking at slide 41 of my slide
6 presentation for Judges Hoskins and Goodson, and I wanted to highlight
7 here what configuration is disclosed. As we said, the only disclosure, the
8 only embodiment that's disclosed in this patent is a system where there is
9 two sprockets internal to the machine as part of the drive path, as part of the
10 drive cable path. There's two sprockets. There's a pulley before that.

11 And I've actually in this presentation for the record we circled the
12 wrong pulley. It should be a different pulley that's circled, because the
13 pulley that we circled is not the pulley that's part of the drive chain. But for
14 the purposes of this discussion, we think it's undisputed that the only thing as
15 it's disclosed is an embodiment with a single pulley and two sprockets.

16 Now, as we have discussed earlier, we said in our Petition we think
17 the patent makes it evident and, Judge Worth, you asked me a question about
18 this. We think that it would have been obvious to replace in the industry at a
19 time a pulley with a sprocket. We think that a person of ordinary skill in the
20 art could do that. But as we pointed out in the very first slides that I drew
21 Your Honors' attention to in this presentation, that's not the legal standard.

22 Obviousness is different than written description, and written
23 description is a higher standard that the Patent Owner bears the burden to
24 prove that they possessed the specific configuration that they're now
25 claiming, and what they're claiming here is different. They're claiming three

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1 pulleys and there is nothing, zip, zilch, nada in the patent disclosing a
2 configuration with three pulleys, period, full stop. Under Novozymes, under
3 TurboCare and Agilent and D Three, that should be the end of our
4 conversation.

5 JUDGE GOODSON: Mr. McBrayer, how come this Figure 4A
6 itself doesn't provide support for pulleys given -- you know, I understand
7 that in the detailed description it refers to these components as sprockets 154
8 and 156. But just looking at the drawing, why wouldn't this convey to a
9 skilled artisan components that could be pulleys?

10 MR. McBRAYER: Well, they're circles, Your Honor, and in a
11 situation where they're expressly labeled as sprockets, we don't think that
12 that conveys that you should be using pulleys. If this were an obviousness
13 case, we would say that under the distinction the Board drew earlier that this
14 is a teaching away, right?

15 If we were trying to say that this were the lower bar of obviousness
16 and this patent were being looked to as prior art and the patent were
17 sprockets and I showed up and told you, well, Judge, I know it says
18 sprocket, but that could be a pulley, too, because it's a circle, everyone in the
19 courtroom would erupt and say, wait a minute, that's a specific teaching
20 away from using pulleys. It says sprockets.

21 Just because it's a circle doesn't mean that one of ordinary skill in
22 the art would take from that mere circle for obviousness purposes that it
23 could be something else. And as I've said before and I hope is clear today
24 that if it doesn't meet even that lower bar, it definitely doesn't meet the

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1 written description bar where you have to disclose the specific configuration
2 that you're dealing with.

3 You can't amalgamate components, and in a way what Your Honor
4 is proposing is contrary to what Novozymes is saying. You taken can't pick
5 and choose. You can't go to different parts of the spec and kind of build this
6 Frankenstein monster where you're claiming a configuration if you're not
7 claiming the entire genus, which is the case here. They're not claiming a
8 fitness machine with a drive cable that goes through it through some series
9 of mechanisms. They're claiming a specific configuration of three pulleys.
10 That's not disclosed.

11 JUDGE GOODSON: Would it impact the functionality in any
12 way of the device if sprockets 154 and 156 were replaced with pulleys?

13 MR. McBRAYER: It might, but you then, of course, would have
14 to change the drive cable as well and have a segmented section where you've
15 got a drive cable and a drive chain in sections because, you know, we've had
16 that discussion before with respect to sprockets and pulleys. Some of them
17 require -- you know, a sprocket is going to require a chain, and that was the
18 Board's construction that it be such, right?

19 And, again, if it -- if we're dealing with the lower burden, we didn't
20 even satisfy that, we can't satisfy the greater burden and here they're clearly
21 claiming a configuration and they haven't disclosed that configuration. I
22 know there are circles on the page, but they're labeled sprockets and we can't
23 pick and choose.

24 We can't go to the -- ICON cites to a different section of the patent,
25 turning specifically to -- they cite to Exhibit 2003, which is the '088

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1 application, and there's a sentence in there that uses the phrase sprockets and
2 pulleys, but later in that same paragraph -- this is paragraph 53 on page 8 of
3 that exhibit -- it talks about in this embodiment, in the embodiment shown in
4 Figures 4A and 4B for sprocket 154 is rotatable, second sprocket 156 is
5 rotatable. It discloses, again, one embodiment only and that embodiment
6 has sprockets inside of it, not three pulleys.

7 JUDGE WORTH: So I'm looking at paragraph 53 --

8 MR. McBRAYER: Can I have the Elmo, please?

9 I can do that, Your Honor. Go ahead.

10 JUDGE WORTH: Sure. And I'm in Exhibit 1009. It says the
11 drive chain 150 extends through several pulleys or sprockets and it says
12 including, for example. So I think the counterargument would be that -- are
13 you suggesting that the person drafting the application would have to go
14 through each combination and say there could be a matrix, sprocket, pulley,
15 pulley; sprocket, pulley, sprocket; pulley, sprocket, pulley, if there are three
16 different places and there actually would be -- since input shaft 144 were an
17 associated pulley or a sprocket coupled therewith, and so there could be -- it
18 could be a two-by-three matrix and for drafting purposes does the drafter
19 have to draft each in order to capture that for purposes of claiming?

20 MR. McBRAYER: If you want to preserve the right to adjust your
21 claims later, yes. I think for the purposes of drafting an application, we don't
22 want to set up a situation where we say -- and with every claim you've got
23 to -- you know, every patent -- this wouldn't be patentable in the first place if
24 you didn't describe all these different combinations. Now, you could show
25 up and, as we all know, just describe one embodiment, but the whole written

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1 description document -- and this is gone over again and again and again,
2 right, in the D Three case, Your Honor. There's a long section on this. In
3 the Novozymes case there's a long section on this.

4 The reason why the entire doctrine exists is so that once you file
5 this, you can't morph your claims. You can't amend them later on, not in the
6 original proceeding, not in interferences and not now in IPRs. You can't
7 later amend your claims in a way informed by what's going on in the
8 industry, right?

9 I mean, of course, because these claims -- to be sure these claims
10 are drafted by ICON with someone's product in mind, right, after the fact.
11 They have drawn these claims in an attempt to cover my client's product and
12 avoid prior art, and this is exactly the situation that the written description
13 document was created for and all those cases say is that you're tied to your
14 original description. We can't allow you to morph later on, on down the line
15 to amend in ways where you didn't -- that get you away from what you
16 originally conceived of.

17 So if you want to preserve the ability to do that and you're claiming
18 later, if you want the right to avoid prior art in real specific ways to say, oh,
19 yeah, but that prior art only had three sprockets, not three pulleys, if you
20 want to preserve the ability to be at that level of detail, then, yes, Your
21 Honor, Judge Worth, you have to disclose that, and that's what all those
22 cases stand for. The Novozymes said you can't just point to an amalgam.
23 You have to point to the specific configuration.

24 Same thing with TurboCare. The TurboCare case disclosed all
25 those components, rings and a rotating shaft and a casing and disclosed one

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1 configuration where the spring was adjacent to a spring and it seems trivial
2 to a lot of people who aren't patent lawyers, but the Federal Circuit holding
3 in TurboCare is powerful here, that where they tried to change the claim to
4 the spring not being merely adjacent to the ring, but being between the ring
5 in another component, that's not good enough. So, yes, you do.

6 Your Honor, I next want to --

7 JUDGE GOODSON: Could I ask --

8 MR. McBRAYER: Yes, Your Honor.

9 JUDGE GOODSON: -- in Petitioner's view, what is the
10 relationship of the difference between a pulley and a sprocket? Are those
11 two mutually independent or mutually exclusive species or, you know, if
12 we're looking at them on a venn diagram, is there some overlap between
13 those two things or could one be within the other entirely?

14 MR. McBRAYER: I don't know what ICON's position is with
15 respect to that, Your Honors. Our position, as I stated earlier, is that they
16 were known to be replacements and it would have been obvious to use one
17 instead of the other, as we said in our original Petition, but that's not what
18 we're dealing with here in this argument. Here, you know, of course we're
19 dealing with the higher written description standard where you've got to
20 disclose a specific configuration. Also --

21 JUDGE WORTH: Is a sprocket a type of pulley?

22 MR. McBRAYER: I don't think a sprocket is a type of pulley,
23 Your Honor.

24 JUDGE WORTH: Is there any expert testimony about a
25 construction issue?

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1 MR. McBRAYER: About a construction issue, no, but this Board
2 already construed, you know, one of those terms in a way that I think doesn't
3 let them overlap that makes them distinct things, and we haven't argued for a
4 different construction or for the Board. I don't think that's at issue here
5 today. The Board could re-construe it if it wanted to for the purposes of
6 getting to the written decision -- for the written description decision, but I
7 don't think that's necessary because, again, because I said earlier we think
8 that the specific claim configuration and those cases should govern this.

9 I wanted to turn really quickly to the radio issue, Your Honor, and
10 the radio claims. So I'm going to turn to 45.

11 What the radio claims are dealing with is much the same situation.
12 You have an incorporated by reference application and you have the main
13 application, and one of them discloses a console with no radio and the other
14 one discloses the use of radio frequency ID tags or NFC, near-field
15 communication, but those weren't inside of a console. And so what ICON is
16 now doing is exactly what's prohibited in Novozymes is they know where it
17 disclosed putting those together, that you would have that capability inside
18 the console of one and, again, they're saying it would have been obvious and
19 we're here before the Board to say to you, Judges Hoskins, Worth and
20 Goodson, if I could invite your attention to this, we think that would have
21 been obvious, you know, to put that capability into the electronics console.
22 That would have been obvious, but it's not described in that law in
23 Novozymes, in D Three.

24 The reiteration of that in D Three is just, you know, as I'm showing
25 slide 40 here absolute. Again, adequate written description does not ask

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1 what is permissible. It says in the previous paragraph, it does not ask what is
2 obvious, rather it asks what is disclosed and ICON doesn't disclose that.

3 JUDGE WORTH: If you look at paragraph 62 of Exhibit 1009,
4 which is the part that incorporates by reference the '361 application, it says,
5 one example of customizing a workout that may be utilized in conjunction
6 with the exercise apparatus described herein, and then it refers to the '361
7 application. So isn't it possible that it's incorporating the entire example of
8 customizing a workout?

9 MR. McBRAYER: We think that's the -- I mean, the incorporation
10 by reference is another argument we have, Your Honor, that's not
11 sufficiently incorporated. It is possible, of course, when it says, you know,
12 an example of customizing your workout that we think that's the purpose of
13 the incorporation, not for radio communication. We don't think that second
14 application is properly incorporated for the physical components and the
15 capability of communication of the entire machine, right?

16 What that second application is incorporated for is only for the
17 purpose of customizing your workout. So I agree with you that it is
18 sufficient to incorporate it for everything about customizing your workout,
19 but we don't think that extends to the remote communication capabilities of
20 the entire fitness machine. But the incorporation by reference --

21 JUDGE HOSKINS: Mr. McBrayer, isn't that remote
22 communication part of customizing a workout as described in the '361
23 application?

24 MR. McBRAYER: I don't think that there -- the earlier '361
25 application, Your Honor, describes a customized workout. It describes a

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1 background system. We don't think that the radio capabilities are described
2 in a way that tells you that it's for the purposes of customizing a workout. I
3 mean, they're kind of -- it's kind of background physical limitation stuff in
4 that application, but I don't -- again, we believe that it's improperly
5 incorporated and we ask the Board to find on that issue, but in many respects
6 the stronger argument, the more powerful way for the Board to decide this,
7 the more assured way for the Board to decide on this issue is on the written
8 description thing because it's clear this is no different than the Novozymes
9 case, right? You've got an instance in the radio in the console where they're
10 amalgamating components and that is prohibited with a capital P in the
11 Novozymes case.

12 JUDGE WORTH: But there's no specific reference to having the
13 communication between a radio and a console.

14 MR. McBRAYER: Or the radio being inside the console. You
15 know, I think the claim now is a configuration where the console includes.
16 Not only does the console communicate somehow, but does the console
17 include that, and it's a specific configuration that we think isn't disclosed.

18 If I might, Your Honor, if there are no other questions on written
19 description, we would -- with respect to written description, again, we would
20 urge Your Honors to analyze and we think those need to be analyzed
21 because they're -- it's a tight thicket of those written description
22 configuration cases that we think literally compel the result we're seeking
23 and that ICON is picking and choosing. They're doing what Novozymes
24 prohibits which is in both instances kind of cherry-picking an amalgamation

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1 of components, but they don't show that they possess this one where they're
2 claiming a specific configuration of three pulleys.

3 I want to move onto the not responsive point because it's an easy
4 one to overlook and we think significant. So I'm going to slide 47 now for
5 the benefit of Judges Hoskins and Goodson, if I might. Let me start with
6 slide 48. I'm sorry for inviting you to a particular slide and making you
7 change it.

8 48 is the original claim and it's worth looking at. It's a tower, an
9 arm, a pulley, a handle, a flywheel, a magnetic brake, a console. These are
10 all mechanical components. So the grounds that this Board granted in the
11 original IPR that this Board was going to review and conduct was based on
12 mechanical components, right, the good ole fashion fitness machine that we
13 said was obvious that had pulleys and a tower and an arm and a cable.

14 And then if you turn to the next slide, however, which is slide 49
15 on my presentation, Judges Hoskins and Goodson, here are all the
16 limitations that are added, a radio, an application program, a portable
17 computer -- we call it a smartphone, right -- to track progress and display
18 customized workout routine, display video that demonstrates how to use the
19 strength training apparatus. You've got instructional videos now.

20 Whoa, we are way afar from the claim and the grounds and the
21 scope that this Board originally convened this proceeding on, and we think
22 that that's what responsiveness should mean, inviting the Court's attention
23 now to slide 50 for Judges Hoskins and Goodson.

24 Nothing about the grounds, the grounds that were at issue, right?
25 When you originally instituted this proceeding on the grounds, nothing about

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1 the grounds related to portable computers or smartphones, nothing about it
2 related to software applications, none of it related to fitness goals,
3 instructional videos or radio communications, and this is for us a bridge too
4 far outside of what the regulation requires. And as we pointed out in our
5 briefing, we don't think that the Board has yet directly addressed what it
6 means to be responsive to the grounds.

7 JUDGE WORTH: So this would be an issue of first impression.

8 MR. McBRAYER: We think it is and we would encourage the
9 Board to treat it as such and confer with your colleagues and come to the
10 right decision here, because it's an important one and it doesn't -- we talked
11 in our brief and it's a good way to approach this we think.

12 Let's think about what it doesn't mean, because you've got
13 requirements out there for dealing with -- Your Honors do and the Patent
14 Office does for dealing with amended claims, and they have to be
15 patentable. Namely, they have to be novel and nonobvious, right? That's
16 what's required of claims in 35 U.S.C. 102 and 103 and a host of regulations
17 implementing those, right?

18 But then your own regulation also says that it needs to be
19 responsive to the grounds at issue, and I'm back to slide 47, just showing,
20 again, the regulation for the Court. It's on slide 47 for Judges Goodson and
21 Hoskins.

22 It says, amendments must be responsive to a ground of
23 unpatentability. And because the claims are separately required to be novel
24 and nonobvious, we don't think that just because something is arguably
25 novel or nonobvious, meaning that you just add a limitation, that that

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1 somehow makes it -- that that's always responsive to the grounds.
2 Responsive to the grounds we think requires a nexus to the grounds that are
3 at issue and being within the scope of the proceeding that the Court is
4 dealing with.

5 Like if ICON came here and added, you know, some off the wall,
6 totally different topic, you know, limitation which we think is what they've
7 done, that's not responsive to the grounds. You know, when the grounds at
8 issue are the fitness machine with mechanical limitations and all of a sudden
9 now we're talking about smartphones and the art that's at issue and the time
10 that's been allowed for briefing, the time that's been allowed for the Court to
11 deal with the grounds that are at issue, that to go outside of that is not
12 responsive to those grounds.

13 JUDGE WORTH: But there are mechanical limitations in terms of
14 pulleys.

15 MR. McBRAYER: Right, but let's turn back to that, the slide. I
16 mean, now it's also about smartphones and applications and instructional
17 videos and radio communications. None of that was in the original grounds.
18 Like if we had all sat in a room, if we had come here after your Institution
19 Decision, Judge Worth, and said what are these grounds about, none of you
20 would have said this is going to be an IPR about smartphones or instructional
21 videos. None of us would have said that, and that's why this isn't responsive
22 and we think this is an issue of first impression, we think that the regulation
23 should be interpreted in a way that doesn't make responsive completely
24 coexistent with novel and nonobvious.

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1 JUDGE GOODSON: Wouldn't it be novel and nonobvious in a
2 way that distinguishes the art that's of record or the art that's relied on in the
3 grounds. I mean, you advocated firsthand that it requires a nexus to the
4 grounds. How come limitations being added that distinguish the proposed
5 grounds isn't a sufficient nexus?

6 MR. McBRAYER: Well, because that ends up being coextensive
7 with novelty and nonobviousness, Your Honor. I mean, if you just add one
8 limitation, you can become possibly novel and nonobvious, but it's the type
9 of limitation. I think there's a nexus and a subject matter required, except
10 that when we all sit down and we're doing a prior art search and Your
11 Honors are evaluating prior art -- and the other reason, how about experts?

12 In this case we, you know, had enough notice and we went out and
13 we found an expert who had experience in these extra areas, but required us
14 to switch experts and now you've got to read two different expert reports and
15 there are reasons, regulatory reasons why you wouldn't want to interpret
16 responsiveness just to be this way. Because the reason you all, Your
17 Honors, had to review multiple expert declarations is they took us on this
18 tangent and we think it's impermissible, you know, to do that because Mr.
19 Rawls they -- you know, we had the Rawls declaration and if you looked at
20 his declaration, ICON spent most of his deposition asking him and walling
21 him off from being qualified to talk about computer limitations in our
22 smartphones or apps, right? And we didn't know that that was why they are
23 doing it.

24 But then when the amendments later came out, we knew exactly
25 why. They're trying to force us to get a new expert and now panels have to

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1 deal with the new subject matter, new prior art searches, new obviousness
2 combinations. We think that going off on a tangent that has no nexus to the
3 original grounds is not responsive and we'd encourage the Board and we
4 invite the Board to reach that decision.

5 JUDGE WORTH: We're into your rebuttal. I do have a couple
6 questions that I'd like you to address responding to some of the substantive
7 grounds in the Opposition to the Motion to Amend. The first question, and
8 this applies to both grounds is, have you identified a single component that
9 displays both power and resistance for output purposes, an output
10 component?

11 MR. McBRAYER: Not off the top of my head, Your Honor, but if
12 I do I'll answer that for you on rebuttal.

13 JUDGE WORTH: Okay. And the other question is looking at
14 Wu, Sawicky and Zhou, and this is spanning Grounds 1 and 2, do any of
15 them have --

16 MR. McBRAYER: Well, I don't think Zhou is part of Ground 1,
17 but go ahead, Your Honor.

18 JUDGE WORTH: Yeah, that goes to Ground 2. So for Ground 1
19 it would be -- structurally it would be Sawicky and Wu and then for Ground
20 2 structurally it would be Zhou and Sawicky. Do any of them have a pulley
21 that is displaceable in a downward direction when the handle is pulled?

22 MR. McBRAYER: I will again, Your Honor, look and respond to
23 you and reply. I mean, all of those had displace -- this is not a situation
24 where we're talking about replacing a pulley with a sprocket. I mean,
25 everything has got -- all those references have the limitations that are

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1 claimed and they have them being displaceable. I just don't know if they're
2 displaceable in the downward direction.

3 I don't think that -- by the way, I'm not sure that would be
4 patentable. I'm not sure that's a patentable distinction, because pulling
5 something in a direction if that's not otherwise incorporated into the claim
6 doesn't make it patentable, but --

7 JUDGE WORTH: And it's possible that you could tell us that you
8 haven't made an allegation that there's one component that discloses those
9 things and then I'm wondering -- then the follow-up question would be, is
10 there a place in your opposition or somewhere else where you have spelled
11 out what a proposed combination is for obviousness to arrive at that
12 limitation?

13 MR. McBRAYER: Yes, Your Honor, I'll address that for you.

14 JUDGE WORTH: Okay. Thank you.

15 MR. McBRAYER: I think the answer is yes, but I don't -- in the
16 interest of time so I'm not sitting here searching, I'll let ICON argue and then
17 I'll respond to you specifically during rebuttal.

18 JUDGE WORTH: Judges Goodson and Hoskins, do you have any
19 questions at this time?

20 JUDGE GOODSON: No other questions. Thanks.

21 JUDGE HOSKINS: Let me have one quick question.

22 MR. McBRAYER: Yes, Your Honor.

23 JUDGE HOSKINS: Because I'm going to ask it of Patent Owner,
24 too, so I want to give you the first shot. We have two proceedings here with
25 two slightly different proposed claim sets. Let us suppose that we ultimately

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1 reach a determination that both Motions to Amend are proper and should be
2 granted. What ought we then to do in terms of do all four of the substitute
3 claims go into the patent then or does Patent Owner have to pick one of the
4 two sets from each of the two proceedings?

5 MR. McBRAYER: Mechanically, Your Honor, we think that all
6 four go into the patent.

7 JUDGE HOSKINS: Thank you.

8 MR. McBRAYER: That's what we think they'd propose.

9 MR. GADD: Good afternoon, Your Honors. Again, John Gadd
10 for ICON Health & Fitness, the Patent Owner in this case.

11 Before I start with my slides, I'd like to address the responsiveness
12 issue that was raised by Nautilus, and I think this can best be addressed by
13 just referring simply to our Reply to their Opposition to our Motion to
14 Amend on page 2 and I've got that here. Well, I can see it, but apparently
15 you can't, so let me just read from that case.

16 I don't think that this is an issue of first impression. There is an
17 opinion by the Board in Western Digital Corp. v. SPEX Techs, Inc. This
18 was in -- this was issued by the PTAB April 25, 2018, and here's what the
19 Board said, a proper substitute claim must narrow the scope of the
20 challenged claims in a way that is responsive to a ground of unpatentability
21 involved in the trial. So we're all agreed and, in fact, Nautilus cited this
22 sentence as saying we need to be responsive.

23 But the very next sentence gives guidance on what responsiveness
24 looks like. I quote, for example, a proposed substitute claim adding a novel
25 and nonobvious feature or combination to avoid the prior art in an instituted

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1 ground of unpatentability will narrow the scope of the claim. So, here, the
2 Board in the very next sentence after they say you must be responsive, they
3 suggest as an example one way to be responsive is to add new features that
4 overcome the prior art, and that's exactly what we did here. We added new
5 features that we felt like overcame the art that was cited in the original trial,
6 and in so doing we believe that our substitute claims are responsive to the
7 grounds of the originally instituted trial.

8 Now, going back to the slides, it is our position that in view of the
9 Bosch decision by the Federal Circuit at the end of last year, December 22,
10 2017, that there's no question that in a Motion to Amend in an IPR that the
11 Petitioner, in this case Nautilus, bears the burden of proving the
12 unpatentability of the claims. That burden exists with respect to all the
13 sections, 102, 103 and 112. In fact, in the Bosch decision, which I have in
14 front of me, and I'm looking at page --

15 JUDGE GOODSON: Before we get to the burden, can I ask you a
16 question about this responsiveness issue?

17 MR. GADD: Sure.

18 JUDGE GOODSON: How do you respond to the Petitioner's
19 argument that if all that was required was just an additional limitation that,
20 you know, adds a new and nonobvious feature, then the responsiveness
21 would not be a separate requirement because amended claims are already
22 required to be novel and nonobvious separately?

23 MR. GADD: Well, I'm not sure exactly where that requirement for
24 novelty and nonobviousness comes from separately. I mean, I'm aware, of
25 course, of Sections 102 and 103, but I think we're talking about a specific

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1 regulation that governs IPRs. And in that specific regulation, it mentions
2 that you must be responsive.

3 Now, Nautilus had a slide that quoted the word responsive, but left
4 out the rest of the regulation. I don't have a slide that shows the entire
5 regulation. I'm pretty sure that regulation doesn't say anything about new
6 and nonobvious, but it does say that you have to be responsive. But I would
7 respond by pointing to the Western Digital case and saying that the Board is
8 clearly okay with the idea that one way to be responsive is to add new and
9 nonobvious features.

10 JUDGE GOODSON: Okay. Thank you.

11 MR. GADD: So moving now to slide 25. I want to address the
12 written description requirement. Briefly before I dive into the specifics of
13 this case, I would just state that our case is distinguishable from each of the
14 four cases that Nautilus has put forth today. In each one of those cases, the
15 Court held correctly that the configuration that was being claimed simply
16 was not disclosed.

17 That's not the case here today at all. There's also been a strawman
18 argument that's been raised repeatedly throughout this proceeding that
19 somehow we have argued that these limitations that are disputed with
20 respect to written description are obvious in light of our disclosure. We
21 have never made that argument. Our argument all along has always been
22 that we have express written description support for each of these
23 limitations. We're not making an obviousness argument. We're simply
24 saying that the configuration that we're claiming is expressly disclosed.

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1 So to go on and on about obviousness and to claim, as Nautilus has
2 repeatedly, that we're making that argument is just false. We have never
3 made that argument. If you look throughout all the briefs and everything
4 we've ever said, we've never once argued that our claim limitations are
5 obvious in light of our disclosure.

6 JUDGE WORTH: The panel is familiar with the briefing, so
7 maybe we can just dive into the facts.

8 MR. GADD: Sure. So with respect to limitations that we've
9 labeled 211, m and n, these limitations require a second pulley, a third pulley
10 and a drive cable and that that drive cable extends through the second pulley
11 and through the third pulley. And, again, I'm still referencing slide number
12 25.

13 It's our position that in the original specification that was filed for
14 this patent, which is the '088 application, in paragraph 53 there's express
15 written support for these limitations. The very first sentence says, a drive
16 chain 150 or drive dot, dot, dot cable. I don't know how a drafter could be
17 any more clear than in this sentence to explain expressly that where we say
18 drive chain 150, which is shown in Figure 4A, that that could be replaced
19 with a drive cable. The plain meaning of the words in this sentence clearly
20 indicate that the drive chain could either be a drive chain or it could be a
21 drive cable. In this case it could also be a drive belt.

22 JUDGE WORTH: And your position is that if drive chain 150
23 were a cable, then you would have three pulleys, two or three pulleys.

24 MR. GADD: Well, I don't know if I would go that far with our
25 position, but what I would say is in the very next sentence where these two

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1 sprockets are introduced, again the language, the express language in that
2 sentence starts out saying the drive chain 150, which in the sentence before
3 could be a drive cable, extends through several pulleys or sprockets. So we
4 basically are disclosing two embodiments here, an embodiment with pulleys
5 or an embodiment with sprockets.

6 And then we go on to say -- to give more detail and to discuss
7 more of the sprocket embodiment, but we introduce expressly with the
8 words in the second sentence that these sprockets 154 and 156 could be
9 pulleys or they could be sprockets. There's two embodiments that we're
10 expressly disclosing here.

11 JUDGE WORTH: And then it proceeds to say, for example, it lists
12 a sprocket, first sprocket 154, and then it gives you a choice between a shaft
13 or an associated pulley or sprocket and then it lists a second sprocket 156.
14 And so it seems like one reading of that is that you have a first sprocket 154,
15 a second sprocket 156 and then you have a choice of whether to have input
16 shaft 144 or an associated pulley or sprocket.

17 MR. GADD: I agree with that, but I would expand it based on the
18 clause before that that the sprockets themselves could also be pulleys.

19 JUDGE WORTH: So -- sorry, say that again.

20 MR. GADD: I would expand -- I agree with what Your Honor
21 said regarding that choice in that parenthetical. But based on the clause at
22 the beginning of the sentence, I think it's clear that it is disclosed expressly
23 that the sprockets through which this drive chain 150 extends -- and, like we
24 said, it could be a drive cable as introduced in the sentence prior, that those
25 sprockets could be pulleys because we say it extends through several pulleys

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1 or sprockets, for example, here's a first sprocket and a second sprocket. By
2 introducing the sentence with that clause, we're expressly teaching that these
3 sprockets could be pulleys.

4 JUDGE WORTH: To go back to the conversation that I had with
5 counsel for Petitioner, it's your position that a person drafting the
6 specification does not have to enumerate each of the possibilities in this
7 two-by-three matrix where you could have -- there's three different positions
8 that you could have a sprocket or a pulley or an input shaft and that this is
9 sufficient to disclose all of those combinations. Is that your position?

10 MR. GADD: I don't think in this circumstance a matrix is required
11 to satisfy the written description requirement. What's required is that one of
12 skill in the art reading this specification would understand that the inventors
13 had possession of this embodiment that we're now claiming and whether you
14 put that in a matrix that certainly would satisfy it, but it's not necessary.

15 One reading this -- there's a very limited number of permutations
16 here in these embodiments simply replacing sprockets with pulleys or
17 replacing chains with belts or cables, that without a matrix just using this
18 prose here in the specification, one of skill in the art would read this and
19 understand, oh, I see that the inventor here has invented embodiments that
20 include cables and pulleys or chains and sprockets. I think it's abundantly
21 clear by reading these sentences without a separate matrix that the inventor
22 had possession of those two different embodiments.

23 JUDGE WORTH: My panel members may have some other
24 questions on this, but I'd like to also ask you about the console. What is

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1 your response to the argument that there's no nexus between a console and a
2 radio?

3 MR. GADD: That's a good question, and I'll move now to slide
4 26.

5 This limitation is 21j and, as you can see on the slide, it requires a
6 console configured to communicate via radio with a portable computing
7 device. Now, in the original specification, paragraph 50, there's this
8 statement, the control panel -- and for purposes of today, the control panel is
9 synonymous with the console. So the control panel may further include
10 connections for communication with other devices. So what this expressly
11 teaches in paragraph 50 is that the console can have communication with
12 other devices.

13 JUDGE WORTH: And you're in the '088 application.

14 MR. GADD: Yes, which is the originally filed application that
15 resulted in this patent. So one of skill in the art would read this and say,
16 okay, I see that it could have communication with other devices. I'll read the
17 rest of the specification to find out what types of communication are
18 disclosed that that communication could be and I'll read the rest of the
19 specification to see what those other devices are.

20 Now, as has already been discussed somewhat, this specification
21 incorporates by reference in its entirety another specification. Now, this isn't
22 some random specification that the inventors had never heard of. This was a
23 specification by the same exact company ICON. These were co-workers of
24 the inventors on this particular application. So they were familiar with each
25 other's work and as they were inventing this machine, they realized that this

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1 related work that had been done recently, not yet published, that they knew
2 about would fit nicely and dovetail nicely with this particular machine, and
3 so they incorporated in its entirety that document.

4 We're aware of no case law where the phrase in its entirety has
5 been used that the entire document wasn't incorporated. We think that's a
6 straightforward issue. In this document that was incorporated in its entirety,
7 there's several paragraphs. I've cited just one here, paragraph 87, in this '361
8 application where one of these types of communication is raised and it's
9 radio communication. So going back to the statement, the express
10 statement, the control panel may further include connections for
11 communication, what could that connection be? It could be a radio
12 connection. So that satisfies the written description for configured to
13 communicate via radio.

14 And then with portable computing devices, again going back just
15 to this one sentence in paragraph 87, it teaches a radio communications link
16 may be established between the portable device and the exercise machine.
17 So here we have a console on an exercise machine and we teach in
18 paragraph 50 that it can communicate with other devices. Further on in the
19 specification, because it's incorporated by reference, it teaches that that other
20 device could be a portable computing device.

21 JUDGE WORTH: Would you agree that the purpose -- one of the
22 purposes that's disclosed in the '361 application for the NFC communication
23 would be to customize the workout, for example, based on what the machine
24 is having a recognition of what machine is in use?

25 MR. GADD: In the '361 application, Your Honor?

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1 JUDGE WORTH: Yes.

2 MR. GADD: Yes. I would agree that's one of the purposes. And
3 as Judge Hoskins pointed out, those customized workouts are expressly
4 taught in the '361 application to be transmitted wirelessly via radio between
5 the exercise machine and a portable computing device. So this isn't some
6 big leap. This isn't a situation where we're arguing obviousness. This is
7 expressly taught.

8 You have to read the specification in its entirety and its entire
9 teachings and we grant that unlike the previous written description issue that
10 was raised by Nautilus, this one you do have to read, you know, more of the
11 specification than just two sentences that are back to back, but you still have
12 to read the whole specification and one of skill in the art would understand
13 reading this entire specification that our inventors possessed the idea that our
14 console could communicate via radio with a portable computing device.

15 JUDGE WORTH: I do want to make clear that there is a
16 distinction between written description and enablement and so it's not just a
17 question of what a person of ordinary skill could have done, but I think
18 Petitioner's argument is whether a person of ordinary skill reading the '088
19 application would have understood the inventor had been in possession of
20 that configuration.

21 MR. GADD: I agree with that and it's our position that they would
22 have read this to understand that the inventor had possession of this
23 configuration.

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1 JUDGE WORTH: And that's on the basis of paragraph 50 saying
2 that the control panel had any further connections for communication with
3 other devices.

4 MR. GADD: That's the basis of it, but we would agree that that
5 alone is not sufficient for written description for this particular limitation,
6 because the communication is specified as via radio and the other devices
7 are specified as portable computing devices. So we're not saying that
8 paragraph 50 is sufficient in itself, but it is the basis and that coupled with
9 not just paragraph 87, but several other paragraphs in the '361 application
10 talk about communication via radio. It's scattered about throughout the
11 application. And, in addition, it talks about communication with portable --
12 between an exercise machine and portable computing devices.

13 So to draw an analogy, if this were a 102 rejection, this claim
14 could be rejected based on this specification alone because it includes all of
15 the limitations. It wouldn't require an obviousness analysis.

16 So moving quickly to the second -- again, it's Nautilus' burden to
17 prove the unpatentability of our claims. They've tried to do that in two
18 ways. First, they've tried to say that we haven't satisfied written description
19 under Section 112. As we just demonstrated, that argument fails. They've
20 also tried to argue that our claims are obvious under two separate grounds of
21 obviousness.

22 And now I've turned to slide 27. And for efficiency, we have
23 selected two of the limitations of Claim 21 to demonstrate that Nautilus has
24 not satisfied their burden to demonstrate that these claims are obvious. As
25 Your Honors noted previously, there is a variation between these two sets of

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1 claims. One uses means-plus language and the other does not, so I'll just
2 speak to the second 1408 IPR where we used the non-means-plus-function
3 language.

4 And that element 21j requires a dial and a display where the dial is
5 configured to allow the user to select the level of resistance on a flywheel
6 and the display is configured to provide an indication of the selected level of
7 resistance.

8 Now, we're not standing here before you today trying to argue that
9 our inventors came up with a dial in isolation. Dials are known. We're also
10 not arguing that our inventors came up with a display in isolation. We agree
11 that displays are known. But in this specific machine and this specific
12 console and the specific controls that are best suited to a user in a
13 commercial embodiment, our inventors decided, as an inventive act, that the
14 best combination for controlling this machine is a dial where the user selects
15 the resistance and a display where that resistance is displayed.

16 Now, we submitted an expert declaration in this case by a Mr.
17 Ferraro, and interestingly Petitioner didn't even depose Mr. Ferraro and
18 everything in his declaration is unrebutted. And in his declaration he
19 described that the way we've claimed this particular dial and display is
20 similar in many respects to what he would refer to as a rotary encoder dial,
21 and I've got this little display up here on slide 27 that shows a rotary encoder
22 dial, and that's in contrast to two other types of dials, which are
23 potentiometers and multi-position switches.

24 And the reason this is significant is because in those other two
25 types of dials, the dial itself has some little tick marks or indicia around it so

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1 you can see what the value of the dial is at any given moment, whereas our
2 dial, as it's claimed, doesn't require those indicia or those tick marks and you
3 can't just look at the dial and see what the value is. Instead, you have to look
4 at the separate display, so the dial encodes the value and then that value is
5 decoded and shown on the display.

6 JUDGE WORTH: So in terms of the claim language, there's both
7 a dial for an input purpose and a display for an output purpose. You have
8 two different components.

9 MR. GADD: That's correct.

10 JUDGE WORTH: And then the output component is supposed to
11 display both a resistance and a power.

12 MR. GADD: Yeah, and we're not really talking about the power in
13 this particular limitation, but you're correct, Your Honor, I do believe the
14 claims also require that the power or the work -- I forget the exact term in
15 the claim -- is also output on that display.

16 But the significant thing here is these machines are very expensive
17 machines and they're going to be used by multiple users. Think of it in a
18 gym setting, for example. And we've also talked about customized workouts
19 in our specification. So if multiple users walk in, one a very strong user and
20 one a very weak user, well, you can imagine that the custom workout that's
21 in the console for the very strong user is going to have a much higher
22 resistance than the custom workout for the very weak user that has a much
23 lower resistance.

24 Well, that custom workout can be programmed into the console
25 and can function properly with this type of dial display much better than the

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1 other types because the resistance can be changed internally to the console
2 and can be reset without turning that dial. And so if the very strong user -- if
3 we were to use an inferior dial over here, which is all that's been shown in
4 any of the prior art that's been put forward in the record here is these inferior
5 dials with the tick marks and, you know, they're similar to potentiometers
6 and multi-position switches, then the dial when the new program loads
7 would be set to the wrong tick mark and it couldn't be reset internally the
8 way a rotary encoder dial is reset.

9 Now, we don't use the term rotary encoder dial in our spec or in
10 our claims. We're not claiming a rotary encoder dial. This is just by way of
11 background by our expert, which is unrebutted, wasn't deposed, his
12 testimony was not rebutted, that to describe for the Board and to help the
13 Board understand why this particular embodiment is significant. Because if
14 you just take a step back and look at this from a high level, you might think,
15 oh, big deal this claim has a dial and it has a display. Big deal, those have
16 been around forever. But this particular dial is used to set a resistance of a
17 flywheel with a magnetic braking system and the display is used to display
18 that level of resistance and it's significant.

19 Now, Nautilus argued that these are obvious under two separate
20 grounds, but here's the problem. In their first ground with their five
21 references that they cobbled together, not a mention of a dial anywhere in
22 any of those five references as admitted by their own expert.

23 In the second ground of rejection, again five more references. In
24 all but one of them, none of them mention a dial and their own expert even
25 in this ground conceded that, yeah, there's no console that has a dial. What

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1 there is in Riley -- and this is argued in their sur-reply to our Motion to
2 Amend is that, well, Riley teaches a dial. But if you look at the section
3 where it actually teaches the dial in Riley, you can see that what it's talking
4 about is a dial on this little portable device that a user wears on their belt
5 when they're out jogging and that that dial is used to put input into that tiny
6 little screen or that tiny little device that's worn on their belt.

7 So, again, if you look at the claim language, we're talking about a
8 console on an exercise machine that includes this dial and the dial is used to
9 input resistance for a flywheel of the exercise machine to control a magnetic
10 brake on that exercise machine. Again, our inventors never claimed to
11 invent the dial. A dial has been around for a long time, but this particular
12 dial and this particular configuration coupled with the display is an inventive
13 aspect of our invention and, as recited here, is not taught anywhere in the
14 prior art.

15 The only thing in either of these two grounds where a dial is
16 mentioned is once and that's in connection with, you know, a
17 cellphone-looking device that you wear on your belt that doesn't control an
18 exercise machine, that doesn't control the resistance of a flywheel. It doesn't
19 control a magnetic brake. So it's our position that these two grounds that
20 Nautilus has set forward utterly fail to render obvious element 21j of our
21 Motion to Amend of our proposed amendments.

22 Now, as a second limitation that we also feel Nautilus hasn't met
23 their burden on would be element 21i. It requires a magnetic braking
24 mechanism, including an arm configured to pivot relative to the flywheel. If
25 you look here at --

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1 JUDGE HOSKINS: Mr. Gadd.

2 MR. GADD: Yes.

3 JUDGE HOSKINS: If I'm following along correctly, you're on
4 slide 30; is that correct?

5 MR. GADD: Yes, I apologize. I'm on slide 30.

6 JUDGE HOSKINS: Okay. Thank you.

7 MR. GADD: And here on slide 30 you can see Figure 2. And
8 what you can see here is the pivoting arm, which is labeled 126 and the
9 magnetic braking mechanism, which is labeled 124, and the flywheel, which
10 is labeled 120, and you can see the arrow which we've also highlighted here
11 that shows that that pivoting arm goes up and down.

12 Now, again, this is the -- this is what our inventors invented. They
13 came up with a pulley cable machine that uses a flywheel and a magnetic
14 braking mechanism, but not just any magnetic braking mechanism, a
15 pivoting arm magnetic braking mechanism.

16 In the grounds of rejection proposed, again, each ground cobbles
17 together five references. In each case what was cited against this for
18 obviousness purposes was Watt and Lull, which we concede teach pivoting
19 arms with a braking mechanism in connection with a flywheel, but they
20 teach them in the context of an exercise bike. We're not talking about an
21 exercise bike. We're talking about a cable pulley machine, which is
22 completely different.

23 An exercise bike is something you sit on and pedal with your feet.

24 A pulley exercise machine is something that you use your hands to

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1 manipulate the pulleys, and it's a completely different machine with
2 completely different mechanical and electrical features and it's just different.

3 Now, are they both exercise machines? Sure, but they're very
4 different exercise machines and it's --

5 JUDGE GOODSON: Isn't the purpose of the flywheel in both the
6 exercise bike and the cable machine to dial in the resistance that the user is
7 going to experience in the motion?

8 MR. GADD: We would agree with that, it does affect the
9 resistance of the flywheel, but again it's affecting the flywheel of the
10 resistance as you pedal in one and as you're pulling with your hands on the
11 other. So there are similarities and they do both affect resistance, but our
12 point here and our expert testimony, which we submitted in this case and is
13 of record, is that this is not a obvious combination and that this is not a
14 simple substitution or an easy thing to pull off.

15 Now -- and here's part of the problem. In their obviousness
16 grounds they seek to combine first as base references Wu and Sawicky or
17 Zhou and Sawicky. Well, in both cases you already have magnets being
18 used to affect resistance on a flywheel. So the addition of Watt and Lull is
19 to take those magnets that are already used to affect the resistance of a
20 flywheel and add a pivoting arm to that.

21 Well, they've offered three motivations why one of skill in the art
22 would do that, but none of these motivations make any sense and, therefore,
23 they fail to meet their burden to provide a rational motivation for adding in
24 Watt to Wu and Sawicky or adding in Lull to Zhou and Sawicky.

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1 Now I'm on slide 31. Here's the three over on the side to the right,
2 you can see the three motivations that they give. The benefit of a lighter
3 form-factor, the benefit of no moving parts and that a pivoting arm braking
4 mechanism was an industry standard. None of these make any sense and
5 here's why: Wu in the first ground already had a flywheel. It already had a
6 magnet braking mechanism that slid laterally as opposed to pivoting. It was
7 already lighter than if you add the pivoting mechanism because arguably the
8 pivoting mechanism would be heavier. So this motivation doesn't make any
9 sense.

10 They say the benefit of no moving parts. Again, this doesn't make
11 any sense. If you have a pivoting mechanism, you're going to have moving
12 parts, so the motivation here just -- there's no motivation to modify Wu and
13 Sawicky and add Watt.

14 And then the third one is that a pivoting arm braking mechanism
15 was an industry standard. Not so. It may have been an industry standard for
16 exercise bikes, but you had all kinds of machines in the same time period
17 using flywheels with magnets to control resistance. You had ellipticals.
18 You had rowing machines. You had treadmills. You had -- so all of these
19 other machines that used flywheels, used magnets to affect resistance, and in
20 the record there's not a single machine of any of those categories that uses a
21 pivoting arm. The only machine in the record that uses a pivoting arm is an
22 exercise bike.

23 So it's not an industry standard to use a pivoting arm with every
24 flywheel on every exercise machine. It's only perhaps an industry standard
25 to use a pivoting arm on exercise bikes, and yet they said it would have been

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1 obvious to come along and use -- and take this pivoting arm, which has no
2 benefit that they could articulate, that makes any sense and add it into the
3 combination of Wu and Sawicky.

4 Similar arguments apply to Zhou and Sawicky. Zhou also teaches
5 using magnets to affect resistance on a flywheel, but by adding in the
6 pivoting arm of Lull, they claim it would be lighter. It wouldn't be lighter.
7 It would be heavier. They claim it would have no moving parts. Now, of
8 course, a pivoting arm has moving parts. And, again, the industry standard,
9 it's only an industry standard, if anywhere, in exercise bikes, but not on any
10 of these other hosts of exercise machines that use flywheels.

11 So it's our position that in attempting to render obvious this
12 limitation of Claim 21 that Nautilus has failed to put forth any rational
13 motivation to combine and, therefore, they're simply using our claims as a
14 roadmap to go back with hindsight and cobble together these references
15 without any articulation of why one of skill in the art would have done so.

16 In conclusion, Your Honors, again it's Nautilus' burden to prove
17 that these claims are unpatentable. They've tried to do it with Section 112
18 written description and failed. They've tried to do it with obviousness and
19 we've pointed out at least two limitations where they failed. So it's our
20 position that the Board should allow these claims because Nautilus has failed
21 to meet their burden.

22 We've made a real effort in this case to draft very narrow claims
23 that focus in on what we think is a valuable commercial embodiment, and
24 we feel like these claims are patentable and we would ask the Board to allow
25 all four of these claims.

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1 JUDGE WORTH: I have a couple questions. Can you comment
2 on the distinction, if any, between a pulley and a sprocket?

3 MR. GADD: Sure. So I would take a little bit different position
4 than Nautilus. I think both are pulleys in the general sense of the word
5 pulley, but the main difference being a sprocket typically has teeth and a
6 pulley typically doesn't. It typically just has a groove.

7 JUDGE WORTH: So a sprocket in your view is a type of pulley.

8 MR. GADD: Yeah. It depends on the context and where it's used,
9 but assuming you have some type of a chain or cable or cord going around
10 it, going up one direction and going back the other direction, then it would
11 function as a pulley, yes. I can envision a sprocket where it might not be
12 used in the context of a pulley. But to Judge Goodson's question, the Venn
13 diagram would have quite a bit of overlap.

14 JUDGE WORTH: Do you have expert testimony on this?

15 MR. GADD: I believe in our expert's deposition, Mr. Ganaja, he
16 was asked at some length about the difference between a sprocket and a
17 pulley and where you would use a chain and where you wouldn't use a chain
18 and where you'd use a cable and not use a cable, so I think on the record I
19 would refer you to that section of his deposition that would shed some light
20 on that.

21 JUDGE HOSKINS: Mr. Gadd.

22 MR. GADD: Yes.

23 JUDGE HOSKINS: Let me ask you the same question I asked
24 before in terms of we have two proceedings with one with two proposed
25 substitute claims and one with means language and then two not using

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1 means language. What is your position in terms of if we find both Motions
2 to Amend to be proper and grantable, what happens in the patent at that
3 point in time?

4 MR. GADD: Our position would be that all four claims should be
5 added to the patent. As Your Honor I'm sure is aware, they're both
6 numbered 21 and 22. There would have to be some renumbering. One set
7 would have to be renumbered 23 and 24. But other than that, they could
8 both be added to the patent. For whatever reason, these proceedings were
9 never combined. We have two IPRs going simultaneously and this happens
10 on occasion where you'll have two post-grant proceedings going and you can
11 have claims allowed in both proceedings and then, at most, you'll have to do
12 some renumbering.

13 JUDGE HOSKINS: Do you have any citations for other
14 proceedings where that happened?

15 MR. GADD: I don't as I stand here before. I seem to remember
16 this happening before. If Your Honor would like supplemental briefing, I'd
17 be happy to try to find a case where that happened.

18 JUDGE HOSKINS: No, thank you. Thank you very much. I
19 appreciate your comments.

20 JUDGE WORTH: Let's see, just going back to this claim
21 construction issue, so we issued a preliminary construction with respect to
22 Dependent Claims 3 and 4. We provided Webster's Third International
23 Dictionary which said that a sprocket has teeth that differentiates sprockets
24 from pulleys. And so since for purposes of this decision we determine that
25 the broadest reasonable interpretation of sprockets is a wheel of teeth, and I

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1 believe that elsewhere we commented that there was significance to the
2 choice of wording used in references where the specification in certain
3 places it appeared to be intentional that one word was used in
4 contradistinction to another. Does Patent Owner dispute the definition of
5 sprocket in the decision on institution as a wheel with teeth?

6 MR. GADD: No, Your Honor. We're comfortable that a sprocket
7 typically has teeth.

8 JUDGE WORTH: Okay. So we are reserving some time for your
9 rebuttal.

10 Judge Goodson, any further questions at this time?

11 JUDGE GOODSON: No, thank you.

12 MR. GADD: Your Honors, I'll turn my time over now to Mr.
13 Smoot who is going to address our Motion to Exclude Their Expert
14 Declaration.

15 JUDGE WORTH: Okay.

16 MR. SMOOT: Thank you, Your Honors. If we can go to slide 12.

17 Under the Motion to Exclude, we acknowledge that we bear the
18 burden. And to provide expert testimony, there's three things that are
19 required. One is that the expert be qualified based on their education,
20 training or skills, two, that the testimony be helpful to the trier of fact for the
21 Board and, three, that the testimony be based on sound science and data.
22 And really the dispute today about Mr. Cox revolves around the first prong,
23 whether or not he has sufficient education or training or skills to qualify him
24 as an expert.

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1 So to do that, we would like to point the Board to a quote here
2 from the Federal Circuit where they said it's an abuse of discretion to permit
3 a witness to testify as an expert on the issue of invalidity unless that witness
4 is qualified as an expert in the pertinent art. So it's not just an issue that can
5 be glossed over and we'll just let it slide, but it can be an abuse of discretion
6 to allow an expert to testify when they aren't qualified as an expert.

7 JUDGE WORTH: What case is that?

8 MR. SMOOT: It's from the Sundance case. The citation is on the
9 slide and it's also the citation to our briefing. 550 Federal Third at 1363.

10 So, first, Mr. Cox has no degrees. And if you look at his CV as
11 well as his deposition testimony, he was unequivocal that he has no degrees,
12 particularly no degrees that are relevant or related to mechanical engineering
13 or electrical engineering. When he was taking classes, he took classes at
14 three different universities or colleges. None of the classes were relevant to
15 the technical art here. He didn't take classes on marketing and accounting,
16 things that he worked on while in industry, but he did not take any classes
17 relevant to mechanical engineering or the electrical arts. In regards to his
18 certifications, again, none of the certifications that he had are pertinent to the
19 issue, the technical issues involved in this case.

20 Turning to slide 16. Mr. Cox clearly said in his deposition that he
21 does not consider himself an expert in mechanical engineering. He had
22 similar comments to say, turning to slide 17, regarding electrical
23 engineering. When asked, do you personally know how to make an
24 application program display videos on a portable computing device,
25 language that comes from the amended claims, he said, I do not know how

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1 to write code to do that, no. When asked, do you have a basic understanding
2 of how the Bluetooth protocol functions, his response was not being a
3 computer software engineer, I do not.

4 So what Mr. Cox did and as we look at the record and as we look
5 at his CV, Mr. Cox worked on teams that had folks that had technical
6 expertise. He worked on teams that had mechanical engineers. He worked
7 on teams that had electrical engineers, but Mr. Cox was the director of
8 marketing. Mr. Cox was a businessman without degrees, without technical
9 certifications, who worked on teams that had technical expertise and yet Mr.
10 Cox has been proffered to provide technical expert testimony in this case.

11 And we think that's harmful here because Mr. Cox is a marketing
12 guy and that he could say, oh, you know, I've done this competitive analysis,
13 this looks like a cool feature set that our customers would like or this is what
14 our competitors are doing without the actual knowledge of how to
15 implement any of those features and that's what's damaging here, because
16 Mr. Cox is providing expert testimony saying a person of skill in the art
17 would know how to combine these different features from five different
18 references to arrive at the amended claims, when in reality Mr. Cox doesn't
19 know how to do any of that.

20 What Mr. Cox knows how to do is look at what competitors have
21 done or look at what customers want and say, yeah, marketing-wide this
22 would be a cool collection of features, but he doesn't have the technical
23 exercise of how to actually combine those features and so his testimony is
24 damaging and needs to be excluded in this case.

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1 When asked on this topic of being on a team when asked, on your
2 own, without the help of mechanical engineers, would you be able to design
3 this magnetic braking mechanism, he said, I wouldn't be able to do the
4 engineering drawings, no. When asked, do you believe that on your own at
5 the time of the invention you would have been able to design such a strength
6 training apparatus without the help of any other engineers or electrical
7 engineers or mechanical engineers, his response was, I would have gone
8 through the process that I go through, which is competitive analysis,
9 analyzing the process, coming up with a spec, coming up with different
10 variations, and then working with the team. So I cannot single-handedly
11 take a product from concept to production.

12 When asked why that was, going to the next slide, slide 20, Mr.
13 Cox said, because I'm not a mechanical engineer. If this was software, I'm
14 not a software engineer, so there's certain skill sets that I don't have. And
15 that's our issue with Mr. Cox's testimony is that he's providing expert
16 testimony about why a person of skill in the art would combine all these
17 different -- you know, from five different references in each of these grounds
18 without knowing how to actually do that. He may be a marketing guy who
19 may be able to do the competitive analysis and say, yeah, that would be
20 great, but he doesn't actually know how to do that, so his testimony saying
21 that a person of skill in the art would be motivated to do that or wouldn't
22 know how to do that is impactful enough it ought to be excluded.

23 JUDGE GOODSON: Mr. Smoot, is it your position that he would
24 have to be a person who qualifies as a person of ordinary skill in the art in
25 order to testify as an expert in this proceeding?

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1 MR. SMOOT: Great question. So not necessarily a complete
2 person of skill in the art. As you can see from our experts, Mr. Ganaja was
3 able to testify regarding the mechanical features of our claims and Mr.
4 Ferraro testified as to the electrical components of the claims, but neither of
5 them had the complete full set of technical expertise. So in that sense,
6 neither of them were necessarily a complete person of skill in the art, but
7 they did provide helpful and pertinent expert -- you know, technical
8 testimony on the technical aspects of the claims that were pertinent to their
9 expertise.

10 JUDGE GOODSON: So how much technical expertise is required
11 to clear the hurdle under Rule 702 in your view?

12 MR. SMOOT: Well, they have to have enough technical expertise
13 to be able to have -- maybe a person of skill in the art with respect to that
14 technology area. Is that a fair way to articulate that? So I think we would
15 comfortable saying Mr. Ganaja is a person of skill in the art with respect to
16 the mechanical aspects of our claims or Mr. Ferraro is a person of skill in the
17 art and above that an expert with respect to the electrical and computer
18 programming components of our claims.

19 So if Mr. Cox was a person of skill in the art with respect to the
20 mechanical aspects of our claims, then potentially he could provide expert
21 testimony in that regard, but it's our position that he's not a person of skill in
22 the art with respect to the mechanical or the electrical components of the
23 claims and the amended claims.

24 JUDGE GOODSON: Okay. Thank you.

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1 MR. SMOOT: So on this point of him working on a team, I think
2 one of the best examples, Petitioner makes a lot of hay saying, well, Mr. Cox
3 personally worked on these intense projects. In paragraph 82, Mr. Cox says
4 below I provide an overview of Pyles. Pyles was filed August 13, 1999 and
5 published in 2002. It is also the product of "a project I personally worked
6 on."

7 So if we look at the Pyles application, as he said it was filed on
8 August 13, 1999 and there are two inventors listed and neither of which is
9 Mr. Cox. And if you look at Mr. Cox's CV, his position at the company at
10 the time was the director of marketing. So these projects that he personally
11 worked on, he was part of the team. He was the director of marketing. As
12 he said in his deposition, he did competitive analysis while on the team with
13 others who had technical expertise.

14 JUDGE WORTH: Your time has expired, but please finish your
15 sentence.

16 MR. SMOOT: Okay. I just wanted to point out for the analogous
17 cases, we refer the Court to our briefing and we feel like that's addressed
18 there. If you have questions, I'm happy to address those. If not, we'll
19 reserve the remainder of our time.

20 JUDGE WORTH: Thank you.

21 JUDGE GOODSON: No questions. Thanks.

22 MR. McBRAYER: Your Honor, while I get set up here, I need to
23 get the system back over to displaying our slides.

24 I'm going to start out by blacking out because how I want to start
25 out, Your Honor, my discussion is by answering some of the questions that

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1 the panel members asked me before and that also came up during ICON's
2 arguments, specifically I believe it was Judge Hoskins asked me before
3 about the burden regarding written description.

4 And a little bit more color on why, Judge Hoskins, we believe that
5 this is a burdenless issue or one that ICON holds is that once the amended
6 claims come in, if we were to have not responded, the Board in that situation
7 is still under the obligation to, in this instance, examine the amended claims.
8 We're having claims that are going to be preclusive against the world, at
9 least to the extent they do business in the United States, and we believe that
10 in the instance that we weren't to respond that the Board is still under an
11 obligation to examine those claims and make sure they satisfy the statutory
12 requirements for patentability, one of which being sufficient written
13 description.

14 So I don't think the Board has addressed this issue yet. I'll admit
15 it's a thorny issue, but given the circumstances here, I'm not sure that you
16 need to reach that question. Because under any sense of the burden, we
17 think that ICON's failure to disclose this specific configuration and in those
18 specific cases we cited rule the day.

19 Later on, Judge Worth, you asked me a couple of questions about
20 whether a single console showed power and resistance. The direct answer to
21 your question is, yes, that's the Watt reference at 16 -- column 16, lines 57 to
22 62, shows both. We also argued in Ground 1 that Watt shows power and
23 Dalebout shows resistance. There we were combining the two and
24 highlighting that as long as we're combining Dalebout, the reason we
25 combine Dalebout was for the adjustability of the resistance, but both those

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1 combinations, if this combination is being made, both Watt and Dalebout or
2 Watt shows power and resistance, Dalebout shows resistance.

3 In Ground 2 Pyles shows resistance and Zhou shows work which is
4 a form of power and those are our -- those are the combinations we made in
5 addition to the disclosure in Watt. And then Cox, Mr. Cox's declaration at
6 paragraphs 91 and 93 describe the motivation for combining those
7 references.

8 Judge Worth, you also asked me if there was a single reference for
9 Claim 22 of the displaceable pulley being in the downward direction. The
10 answer there is yes. In both grounds we highlighted Sawicky at column 3,
11 line 55, through column 4, line 5, where its pulley was displaceable in a
12 downward direction. In both of those combinations we're relying on
13 Sawicky for that and Sawicky shows that being displaceable in the
14 downward -- in fact, it expressly describes it as being displaceable in the
15 downward direction. That's also referred to in the Cox declaration at
16 paragraph 122.

17 JUDGE WORTH: Did you have a reply to anything that Patent
18 Owner said about the relationship between a pulley and a sprocket?

19 MR. McBRAYER: I did, Your Honor. You had started -- Your
20 Honor had started to point to some written description where in that passage
21 that we're talking about in the original '088 application that says drive cable,
22 which could also be a chain, you seem to be driving at the conclusion that
23 that description, the disclosure of the type of cable or chain that goes
24 through the system could be a disclosure of whether sprockets or pulleys
25 were used within that system, right?

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1 And so we think that that's not the case. Because in the original
2 application -- I'm going to show the original claims here. This is slide 92 for
3 Judges Goodson and Hoskins. You'll see that the original claims described
4 the apparatus where it says where a cable extends through a sprocket, and so
5 that's obviously teaching that just because you have a cable doesn't mean
6 that you automatically have pulleys.

7 So we go back to that written description where the Patent Owner
8 described that you might have a cable that flows through. Your Honor
9 appeared to be hinting at the conclusion that because the patent description
10 says that there's a cable, oh, that must mean that what's inside is pulleys and
11 yet there's this contrary teaching. So you can't draw that conclusion that if a
12 cable is disclosed, that necessarily means that pulleys are disclosed. That's
13 not the case because of this particular disclosure originally in the patent,
14 Your Honor.

15 JUDGE WORTH: And Patent Owner just now was in responding
16 to what we'll call Judge Goodson's hypothetical that there is an overlap
17 between a pulley and a sprocket, that a sprocket has teeth, but a sprocket can
18 function as a pulley and I know we did cover some of this ground before
19 with you, but I wonder if you wanted to reply to any of that.

20 MR. McBRAYER: Only to say that there's no evidence of that. I
21 mean, I don't think there's any description of that. There's a description in --
22 I mean, both of us have said that those two different components can be --
23 you know, are design choices, right? But no one has said that they're the
24 same thing that a sprocket is a type of pulley. I don't know that that's
25 anywhere in the record or that that's anywhere in the patent and there's been

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1 no briefing on whether the Court can construe one of those so that they're
2 overlapping or coextensive. I think the record is silent as to that and we'll --
3 I mean, our original position we'll stick with it is that they're two separate
4 things known to be design choices, Your Honor.

5 JUDGE GOODSON: Is there any dispute as to whether this
6 content from paragraph 53 of the '088 application carried through, through
7 all the applications in the chain of priority?

8 MR. McBRAYER: No, Your Honor.

9 Turning to the obviousness of the amendments. I'm going to come
10 back and I'm going to finish the written description and Mr. Cox. I'd like to
11 turn to our description of why the amended claims are obvious and the two
12 bases that ICON has argued that those claims are not -- somehow not
13 obvious.

14 The first is the dial limitation. I'm going to black out my
15 presentation here before I go into anything and invite all Your Honors'
16 attention to me. Our primary response here is this: Their argument is
17 nowhere in the patent, right? They're making a claim construction argument
18 that when they claim a dial on their console that the Court should construe
19 that to be only a rotary encoder dial and they submit expert testimony,
20 extrinsic evidence regarding that construction.

21 They haven't asked for the construction. That construction hasn't
22 been briefed. If it had been briefed and anyone had asked you and actually
23 expressly made what they're implying they asked you to do and say I know
24 we only claimed a dial, but we want you to construe that only as a rotary
25 encoder dial, we want you to limit that to -- because of our extrinsic expert

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1 testimony, Your Honors would all roll your eyes, right? There's no way that
2 the word dial on a console can be construed by this Board to be only a rotary
3 encoder dial.

4 Aside from that, the evidence that Your Honors do have is that
5 dials were well-known in the art, and I think ICON in their oral argument
6 even alluded to that fact where they said if this were only any kind of dial,
7 Your Honors would think that that was obvious, right, because dials and
8 switches and knobs were well-known, and that's our argument.

9 That's what Mr. Cox testified to and that's our argument that if the
10 only -- if ICON's basis for distinguishing their new claims is, oh, we've got a
11 dial on our console, not a knob or a switch or a button, that's a ground for
12 patentability. That's not a ground for patentability, Your Honor, and indeed
13 Mr. Cox has testified -- as we note in slide 85, he's testified that that's not the
14 case. That comes from paragraphs 104 and 105 of his declaration about how
15 dials were well-known forms of input on fitness consoles at the time.

16 Also, Your Honor, back to a burden here again. We're talking
17 about a more likely than not burden, and I'd ask Your Honors to sit down
18 and think about that for a second. I mean, are we really saying that it's more
19 likely than not that a dial was not a well-known interchangeable feature with
20 a button or a switch or some other form of input on a console in 2013? I
21 mean, it's fairly preposterous that one would argue that the form of -- the
22 point of novelty over the prior art is but we added a dial to our fitness
23 console.

24 JUDGE WORTH: I think that one of the points of discussion is
25 that there's a difference between means for input and means for output, and I

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1 would invite you to show the Board how that plays out, for example, in
2 Dalebout -- in Dalebout and Pyles, for example. In other words, are you
3 relying on the same component as the means for input and the means for
4 output with respect to displaying resistance?

5 MR. McBRAYER: Okay. I'll be able to answer that in a second
6 for Your Honor but, you know, just strictly for the -- I mean, first of all,
7 we're allowed to, right? In a piece of prior art you can have one component
8 that satisfies both limitations if it satisfies both functions, right, if the
9 claimed device or the claimed thing, whatever the claim constructions of
10 both of them are, if a designated widget within the prior art in this instance
11 satisfies both of them, then it satisfies both of them, unless they're expressly
12 claimed as being something completely different.

13 Like if you've got some language that says, you know, that they're
14 separated or that they're positioned next to each other, if you've got an
15 express claiming that they must be different, then that's wrong, but the
16 presumption is that one widget can satisfy two claim limitations and that is --
17 but I'll address the rest of your question here in a moment. I want to get
18 back to dial, Your Honor, because I don't think that -- you know, their only
19 argument is they've got a special kind of dial and that's simply unsupportable
20 by the current application in their claims. They don't claim a rotary encoder
21 dial. They claim a dial and there's really no dispute on this record that the
22 dial was well-known and that a dial would have been obvious to include.

23 JUDGE WORTH: And it appears that for the 1407 case there's
24 means language and so with respect to the question of whether you can have
25 the same component both, you're dealing with a means claiming. And then

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1 with the 1408 case, it says a dial and a display and so your argument there I
2 think would possibly be answered by that claim language.

3 MR. McBRAYER: But in both instances, Your Honor, a single
4 component can satisfy both claim limitations because there's no -- I mean,
5 that's the default. The only way that that's not the case is if the claims are
6 drafted in a way that requires them to be separate that, you know, claims
7 them as being next to each other or having a physical position or actually
8 describes them as requiring separateness. But if that's not the case, then the
9 default is that one thing can satisfy two claim limitations and that in both
10 instances, both sets of claims, that's the case here. Okay?

11 The pivoting arm -- I want to pull up slide 66 and the motivation to
12 combine because ICON missed a motivation to combine the pivoting arm
13 and it's the second one noted on slide 66, if there were a limited number of
14 ways to implement this. Frankly, Your Honors, I don't -- as a mechanical
15 engineer myself, there's a limited -- there is a limited number of ways in
16 which you can implement getting magnets to move relevant to a rotating
17 disc, right? You can get them to move in a linear manner or you can get
18 them to move in an arcuate manner. There's no other way for them to move.

19 Like it's either -- it's linear or it's not linear. And if it's arcuate,
20 then it's pivoting and there's -- and Mr. Cox testified to this. In that
21 testimony he testified to it specifically at paragraph -- sorry, I'll get the
22 citation specific to the Cox testimony. It's cited here more broadly, but there
23 are just a limited number of ways to do that. It's paragraph 92, I'm sorry,
24 Your Honor.

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1 And that itself is enough for the Board to rule that adding the
2 pivoted arm is obvious, but I also want to just go to their main argument
3 which is it would be obvious in a bicycle, but not a cable machine and that
4 misses the point of what purpose this limitation is serving in the device,
5 which is that the magnets are moving relative to the flywheel.

6 So it doesn't matter what is causing the flywheel to move and
7 you've got no evidence from ICON that having a different kind of external
8 movement somewhere else that's causing the flywheel to rotate in the first
9 instance in any way makes the use of a pivoting arm to engage the flywheel
10 different, like whether it's a bike, a weight machine where you press
11 something, a cable machine where you pull something. The flywheel is
12 moving and to have a pivoting arm moving relative to that flywheel is
13 independent of the kind of movement of the user that's required to actuate
14 the flywheel in the first place.

15 And you've got evidence from Mr. Cox and Mr. Rawls about how
16 this was a well-known feature in the industry and it was known amongst a
17 variety of devices. Mr. Cox gave you specific examples about how it's used
18 in bikes and other kinds of machines. You've got that in the record and we'll
19 stand with respect to that testimony on our papers.

20 Lastly, I wanted to turn to slide 87 and slides 87 to 91 about Mr.
21 Cox. Your Honor, the part that ICON glosses over is that Mr. Cox had 25
22 years of industry experience choosing features and working in teams to
23 design features into fitness machines. The second important point is that
24 that is the level at which they are claiming.

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1 ICON's claims do not require any specificity about how the
2 Bluetooth protocol is implemented for radio communications within the
3 code. They just require that the radio be in the console. So if what we're
4 claiming, if the level at which ICON is claiming, which is the level they are,
5 is at the level of feature selection, should this have a radio in the console,
6 should it have a console at all, should it have, you know, pull cables or not,
7 should it have a set of weight stacks or should it have a flywheel?

8 If you're talking about component selection, that's what Mr. Cox
9 has experience in. And ICON just admitted in its argument that Mr. Cox is
10 experienced for 25 years in that area, which that admission is largely fatal to
11 their motion here because that's the level at which they're claiming. There's
12 nothing in their claims about the specific code in the Bluetooth application.
13 They don't even Bluetooth. They just claim radio and they don't -- there's
14 nothing in there about any specificity for the radio. There's nothing in there
15 for any specificity about computer code.

16 And Mr. Cox says I can't draw CAD drawings and perform -- in
17 one of ICON's slides they were criticizing his lack of ability to perform
18 bearing load calculations. There's no requirement for bearing load
19 calculations or any sort of bearing load range in their claims. If there were,
20 we might be having a different conversation. But as long as their claims are
21 what they are, which is the aggregation of features and the choosing of
22 features, that's exactly what Mr. Cox did for 25 years ago.

23 I wanted to move on to slides 90 and 91 specifically, because
24 ICON makes -- invites the Court to make what I think would be a grave
25 mistake. They invite the Court to find that Mr. Cox was a businessman,

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1 which is a generic term that has no support in the record. Of course, they're
2 doing that to imply that he doesn't have adequate experience with choosing
3 features and with the level of fitness machine components that are claimed
4 in the claims.

5 ICON cites to two things for the proposition that Mr. Cox was
6 merely a businessman, and I'm going to show them to you now. On slide 91
7 they asked him at his deposition how drawings are created. And he says,
8 they would, after a meeting and specification and a competitive analysis to
9 give them reference points. So they would not simply say, Chris, here's the
10 product that I think you should develop. We go through part of our
11 development process and then ultimately we do drawings or sometimes we
12 would go straight to prototypes. It depends on the complexity of the
13 product.

14 There's nothing there about Mr. Cox being a businessman. It
15 doesn't use the word businessman. It doesn't describe his role being only of
16 a businessman. To the contrary, it describes his role being exactly what the
17 claims here are describing is a choice of components and him being involved
18 expressly in that process.

19 His deposition, his CV, his testimony nowhere contain the word
20 business, nowhere contain the word businessman. ICON is wrong to say
21 that he's merely a businessman because it's wholly unsupported in the
22 record. It's entirely rhetoric and it's belied by Mr. Cox's 25 years of
23 experience with the kinds of components and combining them in ways in
24 machines and deciding to combine them in machines exactly the way
25 ICON's claims require.

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1 Slide 91, for Judge Hoskins and Judge Goodson, shows the second
2 quote that ICON relies on for the proposition that Mr. Cox might be only a
3 businessman and, of course, it says nothing about being a businessman.

4 Your Honors, to conclude 1407 and 1408, ICON is claiming a
5 specific configuration of pulleys and sprockets and of a radio inside of a
6 console. And in both instances what they're doing is picking components in
7 the word of Novozymes', you know, cherry-picking or agglomerating
8 components from different parts of the specification, and you can't do that.
9 You know, you've got to disclose -- the written description requirement
10 relies on what is disclosed, not what is obvious, not what is capable, not
11 what is -- might be enabled, as Judge Worth pointed out, by a person of
12 ordinary skill in the art's background knowledge.

13 What governs the written description art requirement is what is
14 disclosed and ICON needs to show that as long as it's relying on this specific
15 configuration, which it is. To get it over the prior art, it needs to have
16 disclosed those and it didn't.

17 We'll rest on our papers for the remainder, Your Honor. The
18 responsiveness requirement should be decided we think that the case that
19 ICON pointed out doesn't -- didn't present this issue for the panel, that the
20 language that ICON cited was merely a statement about what was at issue in
21 that case and they didn't have such a tangential lack of nexus in the amended
22 claims that were at issue.

23 With that, thank you for your time, Your Honors. We ask that you
24 find not only the original claims as hasn't been contested, the original claims
25 unpatentable and the amended claims unpatentable. Thank you.

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1 JUDGE WORTH: I have one more question if you'd like to
2 answer.

3 MR. McBRAYER: I would, Your Honor.

4 JUDGE WORTH: And just going full circle, this is something I
5 asked you at the beginning. Sawicky has both sprockets and pulleys and so
6 have you argued that a person of ordinary skill would have substituted one
7 of those sprockets for pulleys or pulleys for sprockets or that it just doesn't
8 matter?

9 MR. McBRAYER: Oh, no, to the contrary, we think it matters,
10 Your Honor. We argued in our original Petition based on the Rawls
11 declaration that that was a design choice, right, and it was an obvious design
12 choice to be made and the Board found to the contrary, but we'd ask the
13 Board to go back and reevaluate that based on that testimony.

14 They're different. They're different things, but they are design
15 choices, much in the way a screw or a bolt or a rivet are design choices in
16 other areas of mechanical engineering. They're very different things. No
17 one would say that a rivet is a type of screw. They're different things, but at
18 the same time they are design choices that are made by people of ordinary
19 skill in that art. And if we had a patent that claimed a specific thing, we
20 would -- you know, we need to show it and we did with the Rawls
21 declaration.

22 In the original claims you've got Rawls saying that they're design
23 choices and you would have changed Sawicky to meet the requirement of
24 the claims. Mr. Cox testified to that at paragraphs 118 and 119 as well. So

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1 when we came in later on, we came in with, you know, even more evidence
2 that those are different components, but nonetheless obvious design choices.

3 But, again, as I highlighted back at the very beginning of my
4 written description argument, Your Honor, that's a lower standard. Written
5 descriptions are what did you disclose. We think that this is a classic case
6 that goes right in between, right? You got -- it's obvious and we've got
7 evidence of record. It's really uncontested that those are design choices, but
8 that there's no -- nothing that meets the higher standard of written
9 description of specifically disclosing that configuration.

10 JUDGE WORTH: Thank you.

11 If Patent Owner would like to have the last word. I put 17 minutes
12 on the clock.

13 MR. GADD: Thank you. Your Honor, I have a four-sticky-note
14 sur-rebuttal.

15 So my first note is I don't know why we're arguing about whether
16 or not the burden -- or, excuse me, whether Nautilus bears the burden of
17 proving that our claims are unpatentable. We have this Federal Circuit case
18 on point, Bosch, and I'll read to you from it. Again, I have the slip opinion.
19 It's page 22 on the slip opinion.

20 "Rather, the Petitioner bears the burden of proving that the
21 proposed amended claims are unpatentable by a preponderance of the
22 evidence." Again quoting, "This burden of proof allocation applies for
23 questions of indefiniteness as with other questions of unpatentability." Well,
24 indefiniteness is one example. That's a Section 112 indefiniteness. We're

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1 talking about Section 112 written description, but they say, as with other
2 questions of unpatentability.

3 I think this is settled law. I don't know why Nautilus keeps urging
4 this Board to not place the burden of proving unpatentability on Nautilus.
5 The Federal Circuit couldn't be more clear that the burden is on Nautilus to
6 prove the unpatentability of our claims in a motion to amend in an IPR. So
7 that seems like a very strict, forward open-and-shut answer.

8 The second issue that I would like to discuss is the rotary encoder
9 dial. Now, we conceded and we've never claimed a rotary encoder dial
10 using those words, and the term rotary encoder dial also doesn't appear in
11 our specification. But part of the purpose of an IPR is to give some context
12 and background for limitations that do appear in our claims, and so we came
13 forward with an expert in user interfaces, Mr. Ferraro, and he went in great
14 length in his declaration talking about how key these limitations are and how
15 they have the characteristics of a rotary encoder dial.

16 Now, Nautilus I believe just said that, well, this wasn't briefed and
17 we didn't talk about claim construction and it's true we haven't. I don't
18 believe we've talked about claim construction for rotary encoder dial.
19 There's no need to because it's not in the claims, but what is in the claims are
20 these limitations and this was briefed extensively. And as Your Honors may
21 recall, even though we put forward Mr. Ferraro's declaration in our Reply, in
22 this case Nautilus was granted a sur-reply and they were given the
23 opportunity to depose our expert, Mr. Ferraro, and then discuss their
24 deposition of Mr. Ferraro in their sur-reply.

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1 And, again, this is another situation where even though they had
2 the opportunity to help augment the record and come up with some actual
3 evidence to support their position, they didn't even depose Mr. Ferraro. He
4 was available for deposition and they chose not to depose him. And so what
5 you have instead is attorney argument arguing that these limitations aren't as
6 significant as Mr. Ferraro says they are and that they're obvious even though
7 Mr. Ferraro, an expert in this aspect of the invention, says they're not
8 obvious.

9 And on the other side, instead of a deposition to flesh that out and
10 try to explore that more and get some more evidence on the record, all you
11 have is attorney argument saying, no, it would have been obvious. So we
12 would just contest that this was briefed and there was opportunities to
13 augment the record, at least with a deposition and that opportunity was
14 passed over by Nautilus.

15 Again, the reason this rotary -- or, excuse me, the dial and the
16 display configuration is so important is because you'll notice instead of
17 coming up with a reference that teaches this dial display combination, the
18 only thing on the record that indicates that this would be obvious is the
19 testimony of Mr. Cox. So instead of going out and finding a reference that
20 teaches this particular display and this particular dial in the way that they
21 interact with one another, they came forward with an expert declaration that
22 says, hey, this would have been obvious. Here's a whole bunch of dials.
23 They're not the right kind of dial. They have the display or the markings on
24 the dial, but it would have been obvious to do the dial and the display that's
25 in our claims.

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1 Well, as we've already discussed, there's problems with Mr. Cox's
2 testimony because he wasn't an expert on control panels or consoles for
3 exercise machines. He was by his own admission a marketing director, and
4 the only education he had in this area was business classes like accounting
5 and psychology. That's his own testimony.

6 To Judge Worth's question regarding whether the dial and the
7 display are separate, you can look at the claim language here and you can
8 see that they're claimed separately, so that gives a presumption that they're
9 two separate items. But in addition to what you can see here in limitation
10 21j, the dial has a certain function. It's used to select the level of resistance,
11 but the display is not only used to provide a indicia of the selected level of
12 resistance, but as Judge Worth noted, later on in another limitation or maybe
13 in the same limitation before or after, the display is also used to show the
14 power and so nowhere has anybody made any argument that there's a dial
15 that shows both the resistance and the power level. So it's clear that these
16 are two separate limitations.

17 There was some discussion about the magnet braking mechanism
18 and there was the assertion that it would have been obvious to use the
19 pivoting arm because there's just a real limited number of ways to use
20 magnets in connection with a flywheel, but there is record evidence in the
21 deposition of our expert, Mr. Ganaja, that there were, in fact, many different
22 ways to affect the resistance of a flywheel using magnets.

23 Pivoting arm is one of them. And as we've stated, that was only
24 found in exercise bikes as far as the record reflects, but there were other
25 types of -- and there were linear magnetic braking mechanisms as is taught

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1 in Wu, but our expert testified that in addition to just having arcing and
2 linear motions to move the magnets closer and further away from the
3 flywheel that the position of those magnets with respect to the flywheel is
4 significant.

5 For example, you can have magnets that approach from the side
6 perpendicular to the flywheel. You can have magnets that approach toward
7 and away from the edge of the flywheel and parallel to the flywheel. And
8 then one form of magnets that is perhaps superior to all the magnets that
9 we've been discussing is an electromagnet. Well, the magnet doesn't have to
10 move at all, but instead you adjust the electricity to the magnet and thereby
11 increase or decrease the magnetism of the magnet without moving the
12 magnet at all, and that as our own expert testified was the magnet that one of
13 skill in the art would probably go with because it doesn't have all of the
14 problems associated with moving the magnet around and having to have the
15 space so that it doesn't conflict with other parts.

16 So this argument that, well, this was basically the only way to do
17 this and so, of course, it was obvious just isn't true. There's all kinds of
18 different ways and configurations and positions and directions that you
19 would move a magnet with respect to a flywheel.

20 Again, we would urge Your Honors to examine the record
21 carefully. It was asserted that Mr. Cox testified and gave examples of a
22 whole bunch of different machines that use a pivoting arm, but that simply
23 isn't true. If you scour the record, you won't find an example of a single
24 machine other than an exercise bicycle that uses a pivoting arm with a
25 magnet braking mechanism.

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1 Now, as I said, you will find examples and discussion of other
2 machines that had a flywheel and that used magnets in some fashion, but
3 none of those, except for exercise bikes, had a pivoting arm connected to
4 that magnetic braking mechanism. And so it's just not true that Mr. Cox
5 gave examples of a bunch of different machines with pivoting arms. He
6 only gave examples and the record only has examples of an exercise bike.

7 And it's our position and it's our expert's position that it would not
8 have been obvious to take that pivoting arm from an exercise bike and
9 incorporate it into a cable and pulley machine when there were superior
10 ways of doing it, including the ways that were already being used in Wu and
11 Zhou and including the use of something like an electromagnet that doesn't
12 require any motion at all for the magnets. They just stay in the same place.

13 So with that, I'll turn the time over to Mr. Smoot to discuss the
14 Motion to Exclude.

15 MR. SMOOT: Your Honors, there were just two quick points I
16 wanted to make regarding the Motion to Exclude. First, Nautilus says that
17 our assertion, our recognition that Mr. Cox was able to identify a list of
18 features makes our challenge to his credentials fatal. I don't think that's the
19 case. I think that highlights the issue here, and that is Mr. Cox can cobble
20 together a list of features, but the claim is not just to cobble together a list of
21 features. The claims are a reflection of a collection of a very detailed
22 specification that writes up a very detailed actual machine that our inventors
23 came up with.

24 And while it is articulated in terms of features, it's a very different
25 exercise in that our inventors had to provide written support and enablement

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1 of a particular configuration of device and then we had that reflected in a set
2 of claims that are reflected in a set of features.

3 Now, what Mr. Cox is able to do, as we talked about, is
4 competitive analysis. He can cobble together features, but he does not have
5 the technical expertise of why a person of skill in the art would actually
6 implement those features, how they would actually combine these five
7 references. He can look at features and say, yeah, that would be a great
8 feature, but he doesn't have the technical expertise to combine those features
9 and that's what we think is fatal to Mr. Cox's testimony and why it should be
10 excluded.

11 The last point I wanted make was to point the Board to the 523 IP
12 case, and that was a case from the Southern District of New York where
13 there was a patented inventor who had worked in a certain industry for
14 decades. He worked and started companies, sold companies, been president
15 of companies that dealt with telephone calls between patients and doctors
16 and the support system and infrastructure involved there.

17 His patent involved a software system where he had given a very
18 detailed specification to some software engineers and they had written the
19 software about how this was -- his patent was going to be implemented. He
20 had a business that was implementing this. But when he tried to provide
21 expert testimony regarding the operation of the software, his testimony was
22 excluded because he didn't have the right expertise.

23 He could provide expertise -- he could provide expert testimony on
24 the topics for which he was an expert, you know, doctor-patient telephone
25 calls, but he couldn't provide the technical testimony regarding issues where

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1 he was not a technical expert. And our contention is that that's very
2 analogous to the situation here with Mr. Cox, that he -- you know, he is
3 listed as a patent inventor, but he does not have the technical expertise to
4 provide an explanation of why a person of skill in the art would have
5 combined all these five different references.

6 He can go do a competitive analysis and find these different
7 features, but as to why someone with a mechanical engineering background
8 and expertise would have combined all these things in a certain way, he
9 simply does not have the technical expertise to provide that testimony.

10 Thank you.

11 JUDGE WORTH: Judges Goodson and Hoskins?

12 Well, thank you very much for your arguments today and we stand
13 adjourned.

14 (Concluded at 4:05 p.m.)

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EXHIBIT 7

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571.272.7822

Paper No. 7

Entered: December 4, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NAUTILUS, INC.,
Petitioner,

v.

ICON HEALTH & FITNESS INC.,
Patent Owner.

Case IPR2017-01363
Patent 9,403,047 B2

Before GEORGE R. HOSKINS, TIMOTHY J. GOODSON, and
JAMES A. WORTH, *Administrative Patent Judges*.

GOODSON, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
37 C.F.R. § 42.108

I. INTRODUCTION

Petitioner filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–19 of U.S. Patent No. 9,403,047 B2 (Ex. 1001, “the ’047 patent”). Patent Owner filed a Preliminary Response to the Petition. Paper 6 (“Prelim. Resp.”).

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We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314; 37 C.F.R. § 42.4(a). Upon consideration of the Petition and the Preliminary Response, we determine that the information presented shows that there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review based on the grounds identified in the Order section of this Decision.

Our findings and conclusions at this stage of the proceeding are based on the evidentiary record developed thus far. This is not a final decision as to the patentability of claims for which *inter partes* review is instituted. Our final decision will be based on the record as fully developed during trial.

A. Related Matters

Petitioner states that it is engaged in litigation and in proceedings at the Board that are unrelated to the '047 patent. Pet. 2. Patent Owner does not identify any related District Court or Board proceedings. Paper 3, 2.

B. The '047 Patent

The '047 patent describes a cable exercise machine that includes a sensor tracking the position of a flywheel incorporated into a magnetic resistance mechanism. Ex. 1001, 5:4–7. An energy tracker receives position information from the sensor and resistance level, and based on those inputs, can determine the amount of calories burned during a pull or over the course of a workout. *Id.* at 5:22–28. The flywheel is arranged to resist movement of four different resistance cables, and to rotate only in a single direction and only when a pull force is exerted by the user, such that the position of the flywheel represents work done as part of the workout. *Id.* at 5:29–32, 54–60.

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Figures 3 and 6 of the '047 patent are reproduced below:

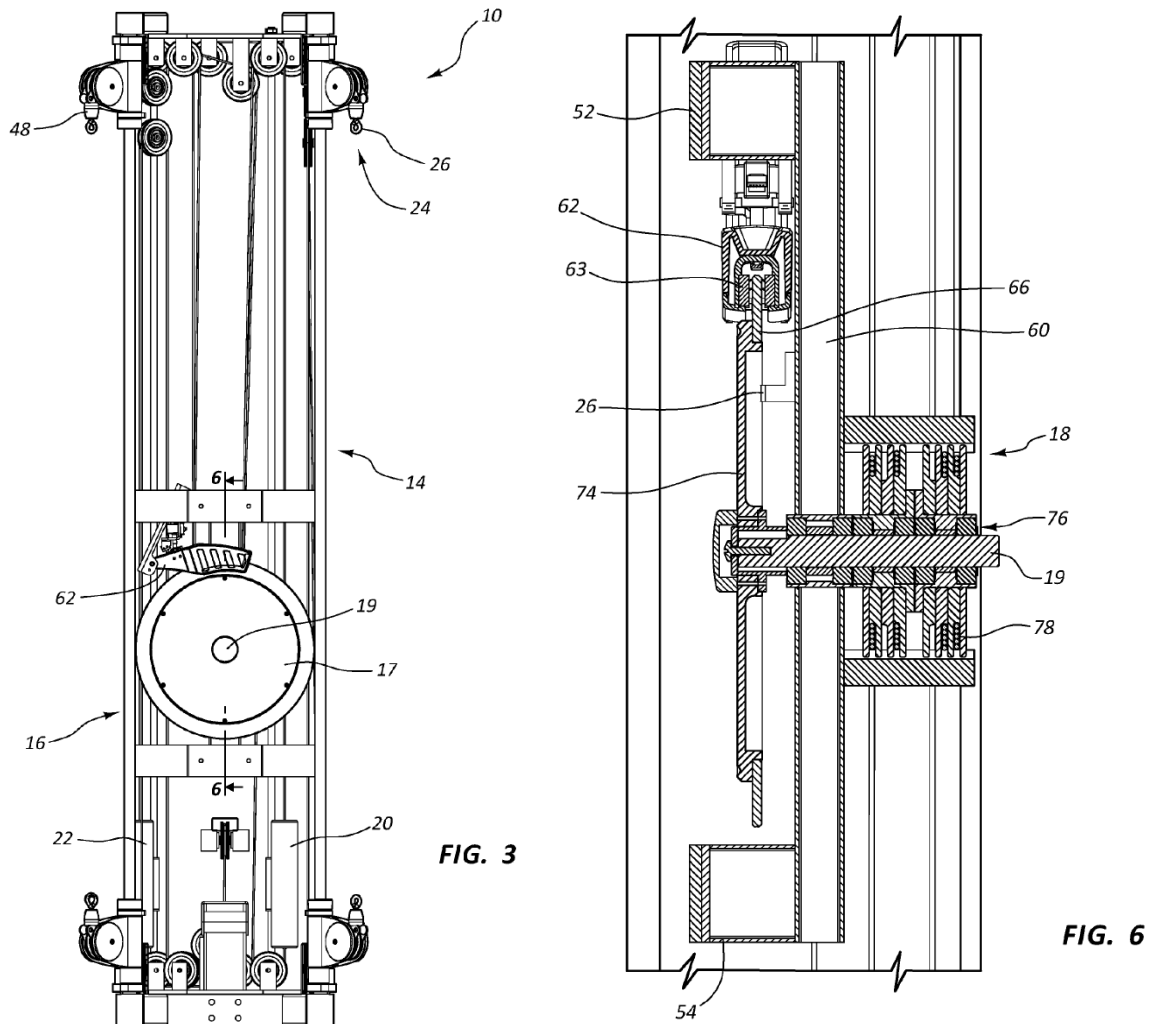


Figure 3 illustrates a front view of cable exercise machine 10 with its outside cover removed. *Id.* at 4:28–29, 6:19–22. Figure 6 is a cross sectional view of the resistance mechanism of cable exercise machine 10. *Id.* at 8:31–32.

As shown in Figure 3, positioned in the middle of tower 14 is flywheel assembly 16, which includes flywheel 17, central shaft 19, and spool subassembly 18 (*see* Fig. 6). *Id.* at 6:24–26. Spool subassembly 18 connects multiple cables to flywheel assembly 16, and the cables are routed within tower 14 via pulleys that direct the movement of the cables, first and second counterweights 20, 22, and flywheel assembly 16. *Id.* at 6:27–32. A

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pull force on one of the cables causes the rotation of flywheel 17. *Id.* at 7:16–20. Flywheel assembly 16 includes arm 62 that contains at least one magnetic unit 63. *Id.* at 7:47–48. “As the arm 62 is rotated to or away from the proximity of the flywheel 17, the magnetic flux through which the flywheel 17 rotates changes, thereby altering the amount of rotational resistance experienced by the flywheel 17.” *Id.* at 7:50–54.

As can be seen in Figure 6, central shaft 19 is rigidly connected to body 74 of flywheel 17. *Id.* at 8:33–34. Bearing subassembly 76 is positioned to transfer a rotational load imparted in a first direction to flywheel 17. *Id.* at 8:34–36. Spool subassembly 18 is connected to at least one of the pull cables. *Id.* at 8:37–39. Flywheel 17 rotates with spool subassembly 18 in the first direction as the user pulls on the pull cables, but as spool subassembly rotates in the second direction imposed by counterweights 20, 22, bearing subassembly 76 is not positioned to transfer the rotational load from spool subassembly 18 to central shaft 19. *Id.* at 8:65–9:5. “Consequently, the flywheel 17 moves in just the first direction.” *Id.* at 9:7–8.

C. Challenged Claims

Petitioner challenges claims 1–19. Pet. 4. Of these, claims 1, 14, and 19 are independent claims. Claim 1 is reproduced below, with labels added by Petitioner for ease of reference:

1. A cable exercise machine, comprising:
 - [a] a first pull cable and a second pull cable incorporated into a frame;
 - [b] each of the first pull cable and the second pull cable being linked to at least one resistance mechanism; and

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[c] the at least one resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel;

[d] wherein the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

Ex. 1001, 12:48–58; *see also* Pet. 23–25 (reflecting labels for claim limitations).

D. Alleged Grounds of Unpatentability

The Petition includes a chart stating these grounds of unpatentability:

References	Basis	Claims
Sleamaker ¹ and Hanoun ²	§ 103	1–5, 11–13
Sleamaker and Six-Pak ³	§ 103	6–10
Sleamaker, Six-Pak, and Hanoun	§ 103	14–19
Six-Pak, Hanoun, and Ehrenfried ⁴	§ 103	1–19
Sleamaker and Kleinman ⁵	§ 103	13
Sleamaker, Six-Pak, Hanoun, and Kleinman	§ 103	19
Six-Pak, Ehrenfried, and Kleinman	§ 103	13
Six-Pak, Hanoun, Ehrenfried, and Kleinman	§ 103	19

¹ U.S. Patent No. 5,354,251, issued Oct. 11, 1994, Ex. 1002.

² U.S. Patent Pub. No. US 2007/0232452 A1, published Oct. 4, 2007, Ex. 1003.

³ *SPT-6 Six-Pack Trainer Owner's Manual*, Ex. 1004. The parties both refer to this reference as Six-Pak. *See, e.g.*, Pet. 12; Prelim. Resp. 5. That spelling is at odds with the reference itself, but to avoid confusion, we follow the parties' convention.

⁴ U.S. Patent No. 5,738,611, issued Apr. 14, 1998, Ex. 1005.

⁵ Int'l Pub. No. WO 2008/152627 A2, published Dec. 18, 2008, Ex. 1006.

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Pet. 15–16. In addition to the references listed above, Petitioner relies on the Declaration of R. Lee Rawls. Ex. 1007.

II. ANALYSIS

A. Claim Construction

We interpret the claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs. LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016). Under that standard, a claim term generally is given its ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). For the purposes of this Decision, resolution of the disputed issues does not require an express interpretation of any claim term. *See Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) (“[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.”).

B. Legal Principles

In *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1 (1966), the Supreme Court set out a framework for assessing obviousness under § 103 that requires consideration of four factors: (1) the “level of ordinary skill in the pertinent art,” (2) the “scope and content of the prior art,” (3) the “differences between the prior art and the claims at issue,” and (4) “secondary considerations” of non-obviousness such as “commercial success, long-felt but unsolved needs, failure of others, etc.” *Id.* at 17–18. “While the sequence of these questions might be reordered in any particular case,” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 407 (2007), the Federal Circuit has “repeatedly emphasized that an obviousness inquiry requires

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examination of all four *Graham* factors and that an obviousness determination can be made only after consideration of each factor.” *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1335 (Fed. Cir. 2016).

With respect to the fourth *Graham* factor, at this stage of the proceeding, the parties have not presented argument or evidence directed to secondary considerations of nonobviousness. We now turn to a discussion of the first three *Graham* factors.

C. Level of Ordinary Skill in the Art

In determining the level of skill in the art, we consider the type of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field. *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986); *Orthopedic Equipment Co. v. U.S.*, 702 F.2d 1005, 1011 (Fed. Cir. 1983).

Petitioner contends that an ordinarily skilled artisan at the time of the invention of the '047 patent “would have had at least a bachelor’s degree in mechanical engineering or biomechanics and two years’ experience designing exercise equipment, or alternatively, an equivalent level of education and experience in product development and engineering regarding commercial fitness products.” Pet. 7 (citing Ex. 1007 ¶ 12). In its Preliminary Response, Patent Owner does not contest Petitioner’s definition of the level of ordinary skill in the art, nor does Patent Owner propose a different definition. Based on the current record and for purposes of this Decision, we adopt Petitioner’s proposed definition of a person of ordinary skill in the art.

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D. Summary of Cited References

1. Summary of Sleamaker

Sleamaker is titled “Multifunction Exercise Machine with Ergometric Input-Responsive Resistance.” Ex. 1002, [54]. Figures 1 and 7 are reproduced below:

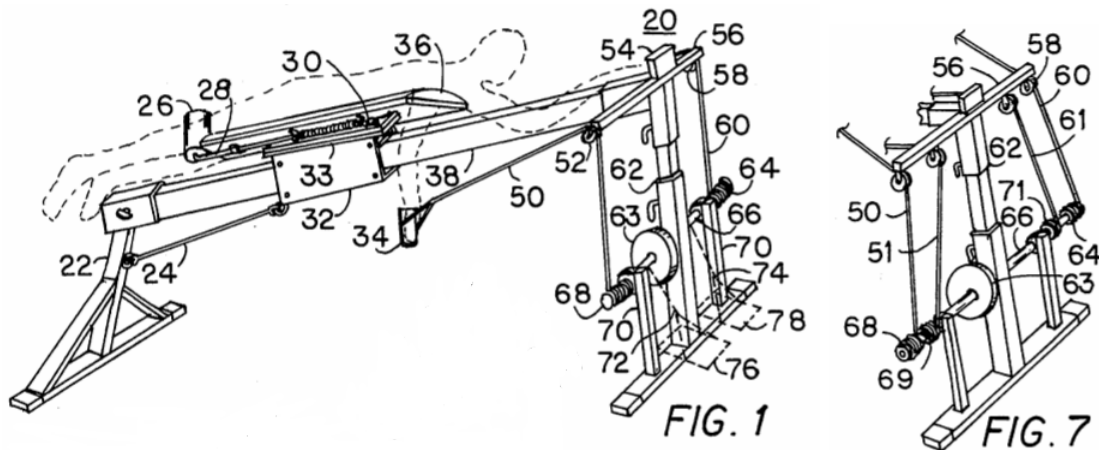


Figure 1 is a perspective view of multifunction exercise machine 20 with front stanchion post 62, rear stanchion assembly with post 22, and monorail 38 secured between the stanchions. *Id.* at 3:23–27, 5:4–11. Figure 7 is a partial perspective view showing the front stanchion of an alternate embodiment. *Id.* at 3:46–49.

As can be seen in Figure 1, attached to front stanchion cross bar 56 are pulleys 52 and 58, which receive pull cables 50 and 60. *Id.* at 5:20–21. The cables have means for attaching handles 34 at a first end, and “are secured, at a second end, to an ergometric variable input-responsive resistance assembly employing a flywheel 63 connected to a rotating shaft 66 propelled by the pull cables 50 and 60 attached to the rotating shaft by spring-loaded retracting one-way clutch drivers 68 and 64, respectively.” *Id.* at 5:24–29. Monitor 54, mounted in the middle of front stanchion cross bar 56, “records the level of activity based upon electronic signals from standard

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sensors which measure the number of turns and the speed of turning of the rotating shaft or the flywheel, which information is translated electronically by standard electronic circuitry into speed and distance and energy output levels.” *Id.* at 5:46–53.

The embodiment shown in Figure 7 includes “an additional pair of pull cables 51 and 61 winding around spring-loaded returning one-way drivers 69 and 71 on the rotating shaft 66.” *Id.* at 6:57–60.

2. *Summary of Hanoun*

Hanoun discloses a computerized spinning exercise system that includes a sensing system to count rotations of a flywheel and a computer that processes the count of rotations and a selected resistance setting to generate user performance data. Ex. 1003, (54), (57). Rotations of the flywheel can be counted “by using an optical position sensor to measure changes in the rotation of the flywheel” or “by using a magnet applied to the flywheel and a Hall-effect sensor applied to a stationary element.” *Id.* ¶ 64.

3. *Summary of Six-Pak*

a. *Sufficiency of Petitioner’s Showing That Six-Pak Qualifies as Prior Art to the ’047 Patent*

A threshold question for grounds that rely on Six-Pak is whether Petitioner has presented sufficient evidence that Six-Pak qualifies as prior art. Petitioner argues that “Six-Pak was published October 7, 2008 and available online thereafter Authentication and proof of the public accessibility of the Six-Pak manual through the Wayback Machine appears in the Affidavit of Christopher Butler.” Pet. 12 (citing Ex. 1010).

In its Preliminary Response, Patent Owner argues that “Petitioner has failed to produce sufficient proof that Six-Pak was publicly accessible before the priority date of the ’047 patent claims.” Prelim. Resp. 3. According to

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Patent Owner, Petitioner's assertion that Six-Pak was published on October 7, 2008 is based on the "Revision Date" listed on the front page, but that statement "says nothing of publication or public accessibility" and is inadmissible hearsay if relied on for establishing publication. *Id.* at 6–8. Regarding Mr. Butler's affidavit, Patent Owner asserts that the first webpage attached to the affidavit includes a URL in its footer that yields an error message when entered into an internet browser. *Id.* at 9. Patent Owner argues that the second attached website printout, which is the Six-Pak reference, is insufficient to establish that persons could have located Six-Pak through reasonable diligence before the priority date of the '047 patent claims. *Id.* at 10. Because "the Six-Pak reference cannot be found on the Wayback Machine through any keyword or subject matter search[, i]t would be impossible for an interested person to search for and find this document without knowing the *exact* URL to type into the Wayback Machine." *Id.* at 10–11.

After considering the evidence and arguments before us at this stage of the proceeding, we determine that Petitioner has made a sufficient threshold showing that Six-Pak was publicly accessible by December 26, 2010, which is three years before the earliest priority date claimed in the '047 patent. *See* Ex. 1010, Ex. A; Ex. 1001, (60). The Internet Archive webpages attached to Mr. Butler's affidavit tend to support that Six-Pak was available on the manufacturer's website by December 2010. Patent Owner's criticisms of Petitioner's evidence may have merit, and Patent Owner is free to continue to challenge Petitioner's showing on this issue during trial. However, at this stage, we need only decide whether Petitioner has shown a reasonable likelihood of prevailing in its challenge. *See* 35 U.S.C. § 314.

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Petitioner's showing clears that hurdle for the reasons discussed below.

The two webpages attached to the Butler affidavit contain URLs that, according to Mr. Butler's testimony, signify that those pages were captured and archived on December 26, 2010. Ex. 1010 ¶¶ 4–6. The first webpage in Exhibit A to the Butler affidavit is an archived webpage from TuffStuff's website listing assembly manuals for home strength equipment. *Id.* at 4–6.⁶ The page includes the SPT-6 Six Pak Trainer. *Id.* at 5–6. In the actual version of the webpage on the Wayback Machine, when that link is selected, it leads to the second webpage attached to the Butler affidavit, which is the Six-Pak reference. *See id.* at 8–26.

We note that in several previous Board decisions, panels have found similar showings by petitioners regarding public accessibility of a reference to be adequate for purposes of institution. *See, e.g., Voxx Int'l Corp. v. Johnson Safety, Inc.*, Case IPR2017-00554, slip op. at 7–12 (PTAB June 14, 2017) (Paper 9) (determining that manual's 2001 copyright notice, "Rev. 1.0 12-01" notation, and April 2002 Internet Archive screenshot constituted an adequate threshold showing that the manual was publicly accessible by April

⁶ As indicated in Mr. Butler's affidavit, the footer lists the URL and the date of capture (Ex. 1010 ¶ 6), but the URL in the footer ends in ellipses. The ellipses suggest that there was insufficient space in the footer to list the complete URL. Patent Owner's assertion that the URL in the footer of this first webpage yields an error message (Prelim. Resp. 9) may be the result of an incomplete address. The panel was able to navigate to the webpage at issue using the Wayback Machine, by following links after a search for the December 2010 version of the www.tuffstuffiness.com site. The complete address is as follows:

https://web.archive.org/web/20101226023407/http://tuffstuffiness.com/productArchiveServlet?M_Product_Category_ID=10001&Nav=10001&category=Assembly%20Manuals

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2002); *Rubicon Communications, LP v. Lego A/S*, Case IPR2016-01187, slip op. at 12–15 (PTAB Dec. 16, 2016) (Paper 38) (determining that Internet Archive evidence provided a sufficient threshold showing of public accessibility as of the archived date); *Warn Industries, Inc. v. Ramsey Winch Co.*, Case IPR2016-00310, slip op. at 7 (PTAB May 19, 2016) (Paper 8) (same); *Crestron Electronics, Inc. v. Intuitive Building Controls, Inc.*, Case IPR2015-01460, slip op. at 12–15 (PTAB Jan. 14, 2016) (Paper 14) (same); *Silver Peak Sys., Inc. v. Riverbed Technology, Inc.*, Case IPR2014-00149, slip op. at 28 (PTAB May 2, 2014) (Paper 7) (determining that printout of website from which reference could be downloaded, along with listings of publication and revision dates before the earliest priority date of the patent being challenged, were sufficient to establish that the reference was prior art for purposes of institution decision).

Patent Owner cites the Board’s decision in *ServiceNow, Inc. v. Hewlett-Packard, Co.*, Case IPR2015-00707 (PTAB Aug. 26, 2015) (Paper 12) as casting doubt on the adequacy of an Internet Archive webpage to show public availability as of the archived date. *See* Prelim. Resp. 11. However, *ServiceNow* is factually distinguishable because the panel’s decision in that case was based in part on evidence that when the links on the archived “download page” were followed, the Internet Archive reflected capture dates for those documents that post-dated the filing date of the challenged patent. *ServiceNow*, slip op. at 14–15. That countervailing evidence submitted by the patent owner cast doubt on whether the references were available for download on the same date as the archived “download page.” *Id.* Here, the archived date for the Six-Pak reference is the same as the archived date for the page on TuffStuff’s website from which Six-Pak

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could be downloaded. Ex. 1010, 4–7.

We reiterate that our determination regarding the sufficiency of Petitioner’s evidence is for purposes of this Decision only and does not signify that Petitioner’s evidence would be adequate under the preponderance standard applicable at the Final Written Decision stage with a full record. *See* 35 U.S.C. § 316(e); *see also TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (“[T]he Board is not bound by any findings made in its Institution Decision. At that point, the Board is considering the matter preliminarily without the benefit of a full record. The Board is free to change its view of the merits after further development of the record, and *should do so* if convinced its initial inclinations were wrong.”). The parties may further develop the evidentiary record during the course of trial on the issue of whether and when Six-Pak became publicly accessible. *See Genzyme Therapeutic Prods. Ltd. P’ship v. Biomarin Pharma. Inc.*, 825 F.3d 1360, 1367 (Fed. Cir. 2016) (“The purpose of the trial in an *inter partes* review proceeding is to give the parties an opportunity to build a record by introducing evidence—not simply to weigh evidence of which the Board is already aware.”).

b. Six-Pak’s Disclosure

Six-Pak is an owner’s manual for the SPT-6 Six-Pack Trainer. Ex. 1004, 1. Six-Pak includes assembly instructions, which provide numerous drawings of the trainer. *Id.* at 2–15. One of those drawings is reproduced below, with labels omitted for clarity:

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Id. at 12.

This drawing shows a main frame in an upright orientation with a stack of weight plates shown in blue. *Id.* at 12, 2 (identifying part 11 as “main frame”), 6 (identifying part 26 as “10 lb steel weight plate black”). Attached to lower, middle, and upper portions of the left and right sides of the main frame are pulleys. *Id.* at 12, 5 (identifying part 68 as “black nylon pulley”), 7 (instructing to “run cable through starting point into top swivel pulley bracket”). A “lat cable” runs through the upper pulleys, while a “low row cable” runs through each of the lower and middle pulleys. *See id.* at 7, 9–10; *see also id.* at 15 (parts list indicating one lat cable and two low row cables).

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In operation, a user pulls user engagement device 47 away from return stop 48 to perform a concentric muscle contraction, which rotates speed control drum 36 clockwise and causes user speed control cable 46 to be unwrapped from the upper half of speed control drum 36. *Id.* at 8:1–8. Cable 46 is simultaneously wrapped onto the lower half of speed control drum 36, which cable “is made available from the cable reeving on either side of the return spring pulley 45 due to the forward motion of the return spring pulley 45 towards speed control drums 36 and 37.” *Id.* at 8:8–18. The user then moves the user engagement device 47 towards return stop 48, while tension force in return spring 41 causes return spring pulley 45 to move away from speed control drums 36 and 37. *Id.* at 8:21–25. This, in turn, causes slack cable to be wrapped onto the upper half of speed control drum 36, while simultaneously unwrapping cable from the bottom half of drum 36. *Id.* at 8:26–32.

Ehrenfried also discloses that the apparatus includes a computer and a display “to confirm for the user the selections he has input into the computer, and displays for the user graphical representations of data collected from the apparatus during the workout.” *Id.* at 11:50–54. Such data can include user speed and total energy expended, and “[c]onventional sensors of various known types may be employed to measure these variables during operation.” *Id.* at 11:54–59. Ehrenfried describes several examples of such sensors, including an electronic eye counter, a potentiometer, displacement sensors, load cells, and a tachometer. *Id.* at 11:60–12:12.

5. *Summary of Kleinman*

Kleinman relates to an exercise machine that allows a user to perform a plurality of exercises. Ex. 1006, 1:7–9. The portion of Kleinman’s

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disclosure that is of primary relevance to Petitioner's challenges here is its description of a counterweight to rewind a cable around a reel after the user releases the cable. *See id.* at 12:23–25; Fig. 10.

E. Sleamaker-Led Obviousness Grounds

1. Claims 1–5 and 11–13

Petitioner contends that claims 1–5 and 11–13 would have been obvious over Sleamaker in view of Hanoun. Pet. 23–33.

Looking first at claim 1, as to element [a], Petitioner asserts that Sleamaker's pair of pull cables 50 and 60 correspond to the claimed first and second pull cables, and Sleamaker's front stanchion bar 56, stanchion post 62, and side supports 70 correspond to the claimed frame. Pet. 23 (citing Ex. 1002, 5:20–21, Fig. 1). Regarding element [b], Petitioner points to Sleamaker's description that pull cables 50 and 60 “are secured . . . to an ergometric variable input-responsive resistance assembly employing a flywheel 63 connected to a rotating shaft 66.” *Id.* at 24 (quoting Ex. 1002, 5:20–27). Petitioner relies on the Sleamaker's ergometric variable input-responsive resistance assembly as disclosing the claimed “resistance mechanism.” *Id.* With respect to element [c], Petitioner contends that Sleamaker's flywheel 63 corresponds to the claimed flywheel, and that Sleamaker discloses that flywheel assemblies can include “a magnetic (eddy current) three wheeled interconnected system used as the ergometric input-responsive resistance means on the rotating shaft.” *Id.* at 24–25 (quoting Ex. 1002, 7:50–63). As to element [d], Petitioner asserts that Sleamaker's rotating shaft 66 corresponds to the claimed central shaft, while the claimed multiple spools are shown by pull cables 51 and 61 wound around shaft 66. *Id.* at 25–26 (citing Ex. 1002, 5:24–29, 6:57–60, Fig. 7).

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As to dependent claims 2–5, Petitioner maps the limitations of these claims to disclosures in Sleamaker and Hanoun. *See* Pet. 26–31. Regarding dependent claims 11–13, Petitioner relies on Sleamaker, in light of the background knowledge of an ordinarily skilled artisan, as teaching the additional limitations of these claims. *See id.* at 31–33.

In its Preliminary Response, Patent Owner does not rebut Petitioner’s arguments in this ground. We determine that Petitioner has shown a reasonable likelihood of prevailing in its challenge to these claims. However, we note that Petitioner’s arguments regarding these claims are not accurately reflected by the headings and summary chart in the Petition. Specifically, all of Petitioner’s challenges in this ground appear under the heading “Ground 1: Claims 1–5 and 11–13 Are Obvious Over Sleamaker in View of Hanoun.” Pet. 23. Likewise, Petitioner’s table summarizing the asserted grounds indicates that the challenges to each of claims 1–5 and 11–13 rely on Sleamaker and Hanoun. *Id.* at 15–16. Yet Petitioner’s actual arguments against independent claim 1 and claims 11–13, which depend from claim 1, cite only Sleamaker and Mr. Rawls’ declaration, and do not cite Hanoun. *See id.* at 23–26, 31–33. Accordingly, notwithstanding the heading and summary table, based on Petitioner’s actual arguments, we understand Petitioner’s challenge to claims 1 and 11–13 to be a ground of obviousness based on Sleamaker alone, while Petitioner’s challenge to claims 2–5 is based on Sleamaker and Hanoun.

To clarify Petitioner’s challenge as we understand it based on the arguments in the Petition, we will institute *inter partes* review on the ground that claims 1 and 11–13 would have been obvious based on Sleamaker. Separately, we will institute *inter partes* review on the ground that claims 2–

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5 would have been obvious based on Sleamaker in view of Hanoun.

Although the Board has authority to recast or reformulate a Petitioner's stated grounds in an institution decision,⁷ in this case, we are not deviating from or adding to the challenges presented in the Petition. Instead, we are conforming the grounds to the arguments that are actually presented in the Petition.

2. Claims 6–10

Each of claims 6–10 depend, directly or indirectly, from claim 1. Ex. 1001, 13:5–24. Petitioner argues that claims 6–10 would have been obvious over Sleamaker in view of Six-Pak. Pet. 33–40. Patent Owner argues that Petitioner's challenge to these dependent claims is “procedurally invalid” because it does not include Hanoun, even though it builds on the challenge to claim 1, which is based on Sleamaker and Hanoun. Prelim. Resp. 13–14. Further, Patent Owner argues that it is Petitioner's burden to identify the grounds in the initial petition, and that the Board is precluded from instituting modified grounds different from what is presented in the Petition. *Id.* at 15–16 (citing 35 U.S.C. §§ 312(a)(3), 314(a)). On this point, Patent Owner acknowledges *SightSound Techs. v. Apple, Inc.*, 809 F.3d 1307 (Fed. Cir. 2015) as contrary authority, but Patent Owner attempts to distinguish that case. *Id.* at 17.

⁷ See *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1312–13 (Fed. Cir. 2015) (noting that governing statutory provisions do not limit the Board's authority to proceed with AIA trial proceedings only on the specific statutory grounds alleged in the petition); see also *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1273 (Fed. Cir. 2015) (“Nor does the IPR statute expressly limit the Board's authority at the final decision stage to the grounds alleged in the IPR petition.”), *aff'd*, *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131 (2016).

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As discussed above in Section II.E.1., Petitioner's actual arguments against claim 1 are based on Sleamaker alone. Patent Owner's assertion that Petitioner's challenge to claim 1 relies on Hanoun is based on the summary chart at pages 15–16 of the Petition. *See* Prelim. Resp. 13. Patent Owner does not point to any argument against claim 1 in the body of the Petition that references Hanoun. Because Petitioner's challenge to independent claim 1 does not rely on Hanoun, and none of Petitioner's arguments against dependent claims 6–10 reference Hanoun (*see* Pet. 33–40), Hanoun is not a part of Petitioner's challenge to claims 6–10. Concerning Patent Owner's argument that the Board lacks authority to institute on modified grounds different from the Petition, we disagree based on *SightSound*. However, as noted previously, in this case, we are not modifying Petitioner's grounds, we are clarifying the grounds so that they conform to the arguments Petitioner actually presented in the body of the Petition.

Based on the record before us, we determine that Petitioner has shown a reasonable likelihood of prevailing in establishing that claims 6–10 would have been obvious over Sleamaker in view of Six-Pak.

3. Claims 14–19

Petitioner argues that claims 14–19 would have been obvious over Sleamaker, Six-Pak, and Hanoun. Pet. 41–47. In its Preliminary Response, Patent Owner does not rebut Petitioner's arguments concerning these claims separate from its arguments discussed in preceding sections. After considering the arguments and evidence currently of record, we determine that Petitioner has shown a reasonable likelihood of prevailing in establishing that claims 14–19 would have been obvious over Sleamaker in view of Six-Pak and Hanoun.

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4. *Grounds Adding Kleinman*

Claims 13 and 19 each recite that “the multiple spools are linked to at least one counterweight.” Ex. 1001, 13:33–34, 14:44. In its challenges to claim 13 based on Sleamaker and claim 19 based on Sleamaker, Six-Pak, and Hanoun, Petitioner argues that an ordinarily skilled artisan would have known that a counterweight was a well understood alternative for Sleamaker’s return springs that rewind the pull cables around the one-way clutch drivers. *See* Pet. 32–33 (citing Ex. 1007 ¶¶ 155, 157); *see also* Pet. 46 (referring back to the same arguments for the corresponding limitation in claim 19).

As a backup position, Petitioner presents grounds that add Kleinman for an express disclosure of a counterweight. Specifically, “to the extent it is argued that the *counter-weight* required in claims 13 and 19 is not disclosed expressly by the combinations above,” Petitioner argues that Kleinman teaches a counterweight to rewind cable while a flywheel rotates in only a first direction. *See* Pet. 69–70 (citing Ex. 1006, 12). Petitioner further argues that “[i]ncorporating this feature of Kleinman would be one of a finite number of ways to cause cable [to] rewind, and would be an example of using a known element in a known way to reach an entirely predictable result.” *Id.* at 70 (citing Ex. 1007 ¶ 255).

Patent Owner argues that Petitioner’s ground challenging claim 13 is procedurally improper because it does not include Hanoun, even though claim 13 depends from claim 1. *See* Prelim. Resp. 13–14. This argument is unpersuasive for the same reasons discussed above in Section II.E.2.

On the current record, we determine that Petitioner has shown a reasonable likelihood of prevailing in its obviousness challenge to claim 13

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based on the combination of Sleamaker and Kleinman, as well as its obviousness challenge to claim 19 based on the combination of Sleamaker, Six-Pak, Hanoun, and Kleinman.

F. Six-Pak Led Obviousness Grounds

1. Claims 1–19

Petitioner contends that claims 1–19 would have been obvious over Six-Pak in view of Ehrenfried and Hanoun. Pet. 47–69.

Concerning claim 1, Petitioner argues that both Six-Pak and Ehrenfried teach first and second pull cables, and that Six-Pak teaches that the cables are incorporated into a frame as recited in element [a]. *See* Pet. 48 (citing Ex. 1004, 5; Ex. 1005, 2:54–55, Figs. 3–4). As to element [b], Petitioner argues that both Six-Pak and Ehrenfried disclose that the cables are linked to a resistance mechanism. Pet. 49–50 (citing Ex. 1004, 12; Ex. 1005, Fig. 3). Petitioner further argues that a skilled artisan would have been motivated to replace Six-Pak’s weight-stack resistance mechanism with Ehrenfried’s flywheel resistance mechanism to achieve numerous benefits, including a lighter, cheaper, safer, and quieter exercise machine. *Id.* at 21–22, 50 (citing Ex. 1007 ¶¶ 121–35, 203). Petitioner relies on Ehrenfried as teaching a flywheel and magnetic unit as recited in element [c]. *Id.* at 51 (citing Ex. 1005, 2:45–51, 4:30–35). Regarding element [d], Petitioner points to Ehrenfried’s speed control drums 36, 37 as corresponding to the claimed “spools” and output shaft 5 as corresponding to the claimed “central shaft.” Pet. 51–52 (citing Ex. 1005, 7:11–17, Fig. 3).

Turning to dependent claims 2–5, Petitioner argues that Ehrenfried and Hanoun teach the additional limitations of these claims. *See* Pet. 52–55. Regarding dependent claims 6–13, Petitioner relies only on Six-Pak and

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Ehrenfried, in light of the background knowledge of an ordinarily skilled artisan, as teaching the additional limitations of these claims. *See id.* at 55–62. In its challenges to claims 14–19, Petitioner relies on Six-Pak, Ehrenfried, and Hanoun. *See id.* at 62–69.

In its Preliminary Response, Patent Owner does not rebut Petitioner’s arguments in this ground separate from its arguments discussed in preceding sections. We determine that Petitioner has shown a reasonable likelihood of prevailing in its challenge to these claims. However, similar to the Sleamaker-led challenges discussed in Section II.E.1, Petitioner’s arguments in this ground are not accurately reflected by the headings and summary chart in the Petition. Petitioner’s summary chart and heading for this ground indicate that all of claims 1–19 are challenged based on Six-Pak, Ehrenfried, and Hanoun. *See* Pet. 15–16, 47. However, Petitioner’s actual arguments against claims 1 and 6–13 rely on Six-Pak and Ehrenfried, and do not cite Hanoun. *See id.* at 47–52, 55–62. Accordingly, notwithstanding the heading and summary table, based on Petitioner’s actual arguments, we understand Petitioner’s challenge to claims 1 and 6–13 to be based on Six-Pak and Ehrenfried, while Petitioner’s challenge to claims 2–5 and 14–19 is based on Six-Pak, Ehrenfried, and Hanoun.

We will institute *inter partes* review on the ground that claims 1 and 6–13 would have been obvious based on Six-Pak and Ehrenfried. Separately, we will institute *inter partes* review on the ground that claims 2–5 and 14–19 would have been obvious based on Six-Pak, Ehrenfried, and Hanoun.

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2. *Grounds Adding Kleinman*

As in the Sleamaker-led grounds, Petitioner includes backup grounds challenging claims 13 and 19 that add Kleinman for the teaching of a counterweight. *See* Pet. 69–70. We determine that Petitioner has shown a reasonable likelihood of prevailing in its obviousness challenge to claim 13 based on the combination of Six-Pak, Ehrenfried, and Kleinman, as well as its obviousness challenge to claim 19 based on the combination of Six-Pak, Ehrenfried, Hanoun, and Kleinman.

III. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted as to claims 1–19 of the '047 patent on the following grounds:

Claims 1 and 11–13 as unpatentable under 35 U.S.C. § 103 based on Sleamaker;

Claims 2–5 as unpatentable under 35 U.S.C. § 103 based on Sleamaker and Hanoun;

Claims 6–10 as unpatentable under 35 U.S.C. § 103 based on Sleamaker and Six-Pak;

Claims 14–19 as unpatentable under 35 U.S.C. § 103 based on Sleamaker, Six-Pak, and Hanoun;

Claim 13 as unpatentable under 35 U.S.C. § 103 based on Sleamaker and Kleinman;

Claim 19 as unpatentable under 35 U.S.C. § 103 based on Sleamaker, Six-Pak, Hanoun, and Kleinman;

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Claims 1 and 6–13 as unpatentable under 35 U.S.C. § 103
based on Six-Pak and Ehrenfried;

Claims 2–5 and 14–19 as unpatentable under 35 U.S.C. § 103
based on Six-Pak, Ehrenfried, and Hanoun;

Claim 13 as unpatentable under 35 U.S.C. § 103 based on Six-
Pak, Ehrenfried, and Kleinman; and

Claim 19 as unpatentable under 35 U.S.C. § 103 based on Six-
Pak, Ehrenfried, Hanoun, and Kleinman;

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and
37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, the trial
commencing on the entry date of this decision; and

FURTHER ORDERED that the trial is limited to the grounds
identified above.

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EXHIBIT 8

US010953268B1

(12) **United States Patent**
Dalebout et al.

(10) **Patent No.:** **US 10,953,268 B1**
(45) **Date of Patent:** ***Mar. 23, 2021**

(54) **STRENGTH TRAINING APPARATUS**

(56) **References Cited**

(71) Applicant: **ICON Health & Fitness, Inc.**, Logan, UT (US)

U.S. PATENT DOCUMENTS

3,123,646 A 3/1964 Easton
3,579,339 A 5/1971 Chang
(Continued)

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FOREIGN PATENT DOCUMENTS

(73) Assignee: **ICON HEALTH & FITNESS, INC.**, Logan, UT (US)

CN 2172137 Y 7/1994
CN 2291169 Y 6/1998
(Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

OTHER PUBLICATIONS

U.S. Appl. No. 61/920,834, filed Dec. 26, 2013, titled "Magnetic Resistance Mechanism in a Cable Machine", 31 pages.

(Continued)

(21) Appl. No.: **17/115,708**

Primary Examiner — Andrew S Lo

(22) Filed: **Dec. 8, 2020**

(74) *Attorney, Agent, or Firm* — Maschoff Brennan

Related U.S. Application Data

(63) Continuation of application No. 16/923,275, filed on Jul. 8, 2020, which is a continuation of application (Continued)

(51) **Int. Cl.**
A63B 21/22 (2006.01)
A63B 21/00 (2006.01)
(Continued)

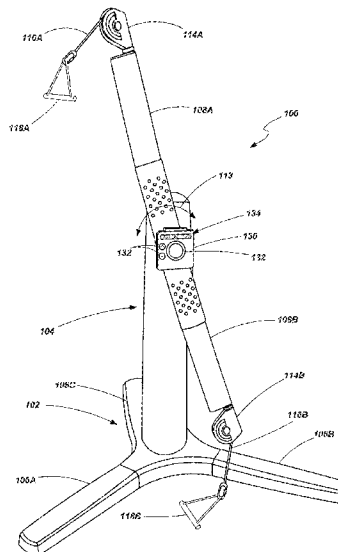
(52) **U.S. Cl.**
CPC **A63B 21/225** (2013.01); **A63B 21/005** (2013.01); **A63B 21/0051** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC A63B 21/225; A63B 24/0087; A63B 24/0062; A63B 21/151; A63B 21/4047;
(Continued)

(57) **ABSTRACT**

Embodiments of a strength training apparatus and related methods are provided. In one embodiment, a strength training apparatus may include a first arm and a second arm each being configured to be selectively pivoted independent of each other at multiple angles relative to each other, a first pulley coupled to an end of the first arm, a first cable extending through the first arm and the first pulley, a second pulley coupled to an end of the second arm, a second cable extending through the second arm and the second pulley, and an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable. The electronic control panel may include a processor and a memory configured to control a current level of resistance, an electronic input device configured to allow the user to set the current level of resistance, and an electronic output device configured to display the current level of resistance.

68 Claims, 7 Drawing Sheets



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Related U.S. Application Data

No. 16/404,413, filed on May 6, 2019, now Pat. No. 10,709,925, which is a continuation of application No. 15/472,954, filed on Mar. 29, 2017, now Pat. No. 10,279,212, which is a continuation of application No. 15/019,088, filed on Feb. 9, 2016, now Pat. No. 9,616,276, which is a continuation of application No. 14/213,793, filed on Mar. 14, 2014, now Pat. No. 9,254,409.

(51) **Int. Cl.**

(52) U.S. Cl.

(58) **Field of Classification Search**

See application file for complete search history.

U.S. PATENT DOCUMENTS

US 10,953,268 B1

Page 3

(56)

References Cited

U.S. PATENT DOCUMENTS

5,217,487 A	6/1993	Engel et al.	5,662,557 A	9/1997	Watterson et al.
D337,361 S	7/1993	Engel et al.	5,667,461 A	9/1997	Hall
D337,666 S	7/1993	Peterson et al.	5,669,857 A	9/1997	Watterson et al.
D337,799 S	7/1993	Cutter et al.	5,672,140 A	9/1997	Watterson et al.
5,226,866 A	7/1993	Engel et al.	5,674,156 A	10/1997	Watterson et al.
5,242,339 A	9/1993	Thornton	5,674,453 A	10/1997	Watterson et al.
5,244,446 A	9/1993	Engel et al.	5,676,624 A	10/1997	Watterson et al.
5,247,853 A	9/1993	Dalebout	5,683,331 A	11/1997	Dalebout
5,259,611 A	11/1993	Dalebout et al.	5,683,332 A	11/1997	Watterson et al.
D342,106 S	12/1993	Campbell et al.	D387,825 S	12/1997	Fleck et al.
5,279,528 A	1/1994	Dalebout et al.	5,695,433 A	12/1997	Buisman
D344,112 S	2/1994	Smith	5,695,434 A	12/1997	Dalebout et al.
D344,557 S	2/1994	Ashby	5,695,435 A	12/1997	Watterson et al.
5,282,776 A	2/1994	Dalebout	5,702,325 A	12/1997	Watterson et al.
5,286,243 A	2/1994	Lapcevic	5,704,879 A	1/1998	Watterson et al.
5,295,931 A	3/1994	Dreibelbis et al.	5,718,657 A	2/1998	Dalebout et al.
5,302,161 A	4/1994	Loubert et al.	5,720,200 A	2/1998	Anderson et al.
D347,251 S	5/1994	Dreibelbis et al.	5,720,698 A	2/1998	Dalebout et al.
5,316,534 A	5/1994	Dalebout et al.	D392,006 S	3/1998	Dalebout et al.
D348,493 S	7/1994	Ashby	5,722,922 A	3/1998	Watterson et al.
D348,494 S	7/1994	Ashby	5,733,229 A	3/1998	Dalebout et al.
5,328,164 A	7/1994	Soga	5,743,833 A	4/1998	Watterson et al.
D349,931 S	8/1994	Bostic et al.	5,762,584 A	6/1998	Daniels
5,336,142 A	8/1994	Dalebout et al.	5,762,587 A	6/1998	Dalebout et al.
5,344,376 A	9/1994	Bostic et al.	5,772,560 A	6/1998	Watterson et al.
D351,202 S	10/1994	Bingham	5,810,698 A	9/1998	Hullett et al.
D351,435 S	10/1994	Peterson et al.	5,827,155 A	10/1998	Jensen
D351,633 S	10/1994	Bingham	5,830,113 A	11/1998	Coody et al.
5,354,252 A	10/1994	Habing	5,830,114 A	11/1998	Halfen et al.
D352,534 S	11/1994	Dreibelbis et al.	5,860,893 A	1/1999	Watterson et al.
D352,536 S	11/1994	Byrd et al.	5,860,894 A	1/1999	Dalebout et al.
5,362,298 A	11/1994	Brown	5,899,834 A	5/1999	Dalebout et al.
D353,422 S	12/1994	Bostic et al.	5,921,892 A	7/1999	Easton
5,372,559 A	12/1994	Dalebout et al.	D412,953 S	8/1999	Armstrong
5,374,228 A	12/1994	Buisman et al.	D413,948 S	9/1999	Dalebout
5,382,221 A	1/1995	Hsu et al.	5,951,441 A	9/1999	Dalebout
5,385,520 A	1/1995	Lepine	5,951,448 A	9/1999	Bolland
5,387,168 A	2/1995	Bostic	D416,596 S	11/1999	Armstrong
5,393,690 A	2/1995	Fu et al.	6,003,166 A	12/1999	Hald et al.
D356,128 S	3/1995	Smith et al.	6,019,710 A	2/2000	Dalebout et al.
5,409,435 A	4/1995	Daniels	6,027,429 A	2/2000	Daniels
5,429,563 A	7/1995	Engel et al.	6,030,320 A	2/2000	Stearns et al.
5,431,612 A	7/1995	Holden	6,030,321 A	2/2000	Fuentes
D360,915 S	8/1995	Bostic et al.	6,033,347 A	3/2000	Dalebout et al.
5,468,205 A	11/1995	McFall et al.	D425,940 S	5/2000	Halfen et al.
5,484,358 A	1/1996	Wang et al.	6,059,692 A	5/2000	Hickman
5,489,249 A	2/1996	Brewer et al.	D428,949 S	8/2000	Simonson
5,492,517 A	2/1996	Bostic et al.	6,113,519 A	9/2000	Goto
D367,689 S	3/1996	Wilkinson et al.	6,123,646 A	9/2000	Colassi
5,511,740 A	4/1996	Loubert et al.	6,123,649 A	9/2000	Lee et al.
5,512,025 A	4/1996	Dalebout et al.	6,171,217 B1	1/2001	Cutler
D370,949 S	6/1996	Furner	6,171,219 B1	1/2001	Simonson
D371,176 S	6/1996	Furner	6,174,267 B1	1/2001	Dalebout
5,527,245 A	6/1996	Dalebout et al.	6,193,631 B1	2/2001	Hickman
5,529,553 A	6/1996	Finlayson	6,228,003 B1	5/2001	Hald et al.
5,540,429 A	7/1996	Dalebout et al.	6,238,323 B1	5/2001	Simonson
5,549,533 A	8/1996	Olson et al.	6,251,052 B1	6/2001	Simonson
5,554,085 A	9/1996	Dalebout	6,261,022 B1	7/2001	Dalebout et al.
5,569,128 A	10/1996	Dalebout	6,280,362 B1	8/2001	Dalebout et al.
5,588,938 A	12/1996	Schnider et al.	6,296,594 B1	10/2001	Simonson
5,591,105 A	1/1997	Dalebout et al.	D450,872 S	11/2001	Dalebout et al.
5,591,106 A	1/1997	Dalebout et al.	6,312,363 B1	11/2001	Watterson et al.
5,595,556 A	1/1997	Dalebout et al.	D452,338 S	12/2001	Dalebout et al.
5,607,375 A	3/1997	Dalebout	D453,543 S	2/2002	Cutler
5,611,539 A	3/1997	Watterson	D453,948 S	2/2002	Cutler
5,622,527 A	4/1997	Watterson et al.	6,350,218 B1	2/2002	Dalebout et al.
5,626,538 A	5/1997	Dalebout et al.	D457,580 S	5/2002	Webber
5,626,540 A	5/1997	Hall	6,387,020 B1	5/2002	Simonson
5,626,542 A	5/1997	Dalebout et al.	6,413,191 B1	7/2002	Harris et al.
D380,024 S	6/1997	Novak et al.	6,422,980 B1	7/2002	Simonson
5,637,059 A	6/1997	Dalebout	6,436,008 B1	8/2002	Skowronski et al.
D380,509 S	7/1997	Wilkinson et al.	6,447,424 B1	9/2002	Ashby et al.
5,643,153 A	7/1997	Nylen et al.	6,454,679 B1	9/2002	Radow
5,645,509 A	7/1997	Brewer et al.	6,458,060 B1	10/2002	Watterson et al.
D384,118 S	9/1997	Deblauw	6,458,061 B2	10/2002	Simonson
			6,471,622 B1	10/2002	Hammer et al.
			6,488,612 B2	12/2002	Sechrest
			6,491,610 B1	12/2002	Henn
			6,506,142 B2	1/2003	Itoh

US 10,953,268 B1

Page 4

(56)

References Cited

U.S. PATENT DOCUMENTS

6,527,678 B1	3/2003	Wang	7,381,161 B2	6/2008	Ellis
6,547,698 B2	4/2003	Inagawa	7,425,188 B2	9/2008	Ercanbrack
6,563,225 B2	5/2003	Soga et al.	7,429,236 B2	9/2008	Dalebout et al.
6,599,223 B2	7/2003	Wang	7,452,311 B2	11/2008	Barnes
6,601,016 B1	7/2003	Brown et al.	7,455,622 B2	11/2008	Watterson et al.
6,623,140 B2	9/2003	Watterson	7,470,219 B2	12/2008	Larson
6,626,799 B2	9/2003	Watterson et al.	7,482,050 B2	1/2009	Olson
6,652,424 B2	11/2003	Dalebout	D588,655 S	3/2009	Utykanski
6,669,607 B2	12/2003	Slawinski	7,510,509 B2	3/2009	Hickman
6,685,607 B1	2/2004	Olson	7,524,272 B2	4/2009	Burck et al.
6,695,581 B2	2/2004	Wasson et al.	7,537,546 B2	5/2009	Watterson et al.
6,699,159 B2	3/2004	Rouse	7,537,549 B2	5/2009	Nelson et al.
6,701,271 B2	3/2004	Willner et al.	7,537,552 B2	5/2009	Dalebout et al.
6,702,719 B1	3/2004	Brown et al.	7,540,828 B2	6/2009	Watterson et al.
6,712,740 B2	3/2004	Simonson	7,549,947 B2	6/2009	Watterson et al.
6,719,667 B2	4/2004	Wong	7,556,590 B2	7/2009	Watterson et al.
6,730,002 B2	5/2004	Hald et al.	7,563,203 B2	7/2009	Dalebout et al.
6,743,153 B2	6/2004	Watterson et al.	7,575,536 B1	8/2009	Hickman
6,746,371 B1	6/2004	Brown et al.	7,575,537 B2	8/2009	Ellis
6,749,537 B1	6/2004	Hickman	7,578,771 B1	8/2009	Towley, III et al.
6,761,667 B1	7/2004	Cutler et al.	7,584,673 B2	9/2009	Shimizu
6,770,015 B2	8/2004	Simonson	7,601,105 B1	10/2009	Gipson, III et al.
6,783,482 B2	8/2004	Oglesby	7,604,572 B2	10/2009	Stanford
6,786,852 B2	9/2004	Watterson et al.	7,604,573 B2	10/2009	Dalebout et al.
6,796,925 B2	9/2004	Martinez	D604,373 S	11/2009	Dalebout et al.
6,808,472 B1	10/2004	Hickman	7,618,350 B2	11/2009	Dalebout et al.
6,811,520 B2	11/2004	Wu	7,618,357 B2	11/2009	Dalebout
6,821,230 B2	11/2004	Dalebout et al.	7,625,315 B2	12/2009	Hickman
6,830,540 B2	12/2004	Watterson	7,625,321 B2	12/2009	Simonson et al.
6,837,830 B2	1/2005	Eldridge	7,628,730 B1	12/2009	Watterson et al.
6,857,993 B2	2/2005	Yeh	7,628,737 B2	12/2009	Kowallis et al.
6,863,641 B1	3/2005	Brown et al.	7,637,847 B1	12/2009	Hickman
6,866,613 B1	3/2005	Brown et al.	7,641,597 B2	1/2010	Schmidt
6,875,160 B2	4/2005	Watterson et al.	7,645,212 B2	1/2010	Ashby et al.
6,878,101 B2	4/2005	Colley	7,645,213 B2	1/2010	Watterson
D507,311 S	7/2005	Butler et al.	7,658,698 B2	2/2010	Pacheco et al.
6,918,858 B2	7/2005	Watterson et al.	7,674,205 B2	3/2010	Dalebout et al.
6,921,351 B1	7/2005	Hickman et al.	7,713,171 B1	5/2010	Hickman
6,958,032 B1	10/2005	Smith	7,713,172 B2	5/2010	Watterson et al.
D511,190 S	11/2005	Panatta	7,713,180 B2	5/2010	Wickens
D512,113 S	11/2005	Carter	7,717,828 B2	5/2010	Simonson et al.
6,974,404 B1	12/2005	Watterson et al.	7,736,279 B2	6/2010	Dalebout et al.
6,997,852 B2	2/2006	Watterson et al.	7,740,563 B2	6/2010	Dalebout et al.
7,011,326 B1	3/2006	Schroeder et al.	7,749,144 B2	7/2010	Hammer
7,025,713 B2	4/2006	Dalebout	7,766,797 B2	8/2010	Dalebout
D520,085 S	5/2006	Willardson et al.	7,771,320 B2	8/2010	Riley
7,044,897 B2	5/2006	Myers et al.	7,771,329 B2	8/2010	Dalebout et al.
7,052,442 B2	5/2006	Watterson	7,775,940 B2	8/2010	Dalebout et al.
7,060,006 B1	6/2006	Watterson et al.	7,789,800 B1	9/2010	Watterson et al.
7,060,008 B2	6/2006	Watterson et al.	7,798,946 B2	9/2010	Dalebout et al.
7,070,539 B2	7/2006	Brown et al.	7,806,589 B2	10/2010	Tashman
7,070,542 B2	7/2006	Reyes	7,815,548 B2	10/2010	Barre
7,097,588 B2	8/2006	Watterson	7,815,550 B2	10/2010	Watterson et al.
D527,776 S	9/2006	Willardson et al.	7,857,731 B2	12/2010	Hickman et al.
7,112,168 B2	9/2006	Dalebout et al.	7,862,475 B2	1/2011	Watterson
7,125,369 B2	10/2006	Endelman	7,862,478 B2	1/2011	Watterson et al.
7,128,693 B2	10/2006	Brown et al.	7,862,483 B2	1/2011	Hendrickson et al.
7,132,939 B2	11/2006	Tyndall	7,862,489 B2	1/2011	Savsek
7,153,240 B1	12/2006	Wu	7,887,470 B2	2/2011	Chen
7,166,062 B1	1/2007	Watterson et al.	D633,581 S	3/2011	Thulin
7,166,064 B2	1/2007	Watterson et al.	D635,207 S	3/2011	Dalebout et al.
7,169,087 B2	1/2007	Ercanbrack et al.	7,901,324 B2	3/2011	Kodama
7,169,093 B2	1/2007	Simonson et al.	7,901,330 B2	3/2011	Dalebout et al.
7,172,536 B2	2/2007	Liu	7,909,740 B2	3/2011	Dalebout et al.
7,192,387 B2	3/2007	Mendel	7,942,793 B2	5/2011	Mills et al.
7,192,388 B2	3/2007	Dalebout et al.	7,980,996 B2	7/2011	Hickman
7,226,402 B1	6/2007	Joya	7,981,000 B2	7/2011	Watterson et al.
7,250,022 B2	7/2007	Dalebout	7,985,164 B2	7/2011	Ashby
D552,193 S	10/2007	Husted et al.	8,007,409 B2	8/2011	Ellis
7,282,016 B2	10/2007	Simonson	8,029,415 B2	10/2011	Ashby et al.
7,285,075 B2	10/2007	Cutler et al.	8,029,425 B2	10/2011	Bronston et al.
7,311,640 B2	12/2007	Baatz	8,033,960 B1	10/2011	Dalebout et al.
7,344,481 B2	3/2008	Watterson et al.	D650,451 S	12/2011	Olson et al.
7,364,538 B2	4/2008	Aucamp	8,070,657 B2	12/2011	Loach
7,377,882 B2	5/2008	Watterson	8,075,453 B1	12/2011	Wilkinson
			D652,877 S	1/2012	Dalebout et al.
			8,096,926 B1	1/2012	Batca
			8,152,702 B2	4/2012	Pacheco
			8,157,708 B2	4/2012	Daly

US 10,953,268 B1

Page 5

(56)

References Cited

U.S. PATENT DOCUMENTS

D659,775 S	5/2012	Olson et al.	9,292,935 B2	3/2016	Koduri et al.
D659,777 S	5/2012	Watterson et al.	9,308,417 B2	4/2016	Grundy
D660,383 S	5/2012	Watterson et al.	9,339,683 B2	5/2016	Dilli
D664,613 S	7/2012	Dalebout et al.	9,339,691 B2	5/2016	Brammer
8,251,874 B2	8/2012	Ashby et al.	9,352,185 B2	5/2016	Hendrickson et al.
8,257,232 B2	9/2012	Albert	9,352,186 B2	5/2016	Watterson
8,298,123 B2	10/2012	Hickman	9,364,714 B2	6/2016	Koduri et al.
8,298,125 B2	10/2012	Colledge et al.	9,375,605 B2	6/2016	Tyger
D671,177 S	11/2012	Sip	9,378,336 B2	6/2016	Ohnemus
D671,178 S	11/2012	Sip	9,381,394 B2	7/2016	Mortensen et al.
8,308,618 B2	11/2012	Bayerlein	9,387,387 B2	7/2016	Dalebout
D673,626 S	1/2013	Olson et al.	9,393,453 B2	7/2016	Watterson
8,398,529 B2	3/2013	Ellis et al.	9,403,047 B2	8/2016	Olson et al.
8,500,607 B2	8/2013	Vittone et al.	9,403,051 B2	8/2016	Cutler
8,517,899 B2	8/2013	Zhou	9,415,257 B2	8/2016	Habing
8,550,964 B2	10/2013	Ish, III et al.	9,421,416 B2	8/2016	Mortensen et al.
8,608,624 B2	12/2013	Shabodyash	9,457,219 B2	10/2016	Smith
8,690,735 B2	4/2014	Watterson et al.	9,457,220 B2	10/2016	Olson
D707,763 S	6/2014	Cutler	9,457,222 B2	10/2016	Dalebout
8,740,753 B2	6/2014	Olson et al.	9,460,632 B2	10/2016	Watterson
8,747,285 B2	6/2014	Hof	9,463,356 B2	10/2016	Rhea
8,758,201 B2	6/2014	Ashby et al.	9,468,793 B2	10/2016	Salmon
8,764,609 B1	7/2014	Elahmadie	9,468,794 B2	10/2016	Barton
8,771,153 B2	7/2014	Dalebout et al.	9,468,798 B2	10/2016	Dalebout
8,784,270 B2	7/2014	Watterson	9,480,874 B2	11/2016	Cutler
8,784,275 B2	7/2014	Mikan	9,492,704 B2	11/2016	Mortensen et al.
8,784,278 B2	7/2014	Flake	9,498,668 B2	11/2016	Smith
8,808,148 B2	8/2014	Watterson	9,511,259 B2	12/2016	Mountain
8,808,152 B1	8/2014	Midgett	9,517,378 B2	12/2016	Ashby et al.
8,814,762 B2	8/2014	Butler	9,521,901 B2	12/2016	Dalebout
D712,493 S	9/2014	Ercanbrack et al.	9,533,187 B2	1/2017	Dalebout
8,840,075 B2	9/2014	Olson	9,539,458 B1	1/2017	Ross
8,845,493 B2	9/2014	Watterson et al.	9,539,461 B2	1/2017	Ercanbrack
8,870,726 B2	10/2014	Watterson et al.	9,550,091 B2	1/2017	Emerson
8,876,668 B2	11/2014	Hendrickson et al.	9,579,544 B2	2/2017	Watterson
8,894,549 B2	11/2014	Colledge	9,586,086 B2	3/2017	Dalebout et al.
8,894,555 B2	11/2014	Olson	9,586,090 B2	3/2017	Watterson et al.
8,911,330 B2	12/2014	Watterson et al.	9,604,099 B2	3/2017	Taylor
8,920,288 B2	12/2014	Dalebout	9,616,276 B2	4/2017	Dalebout et al.
8,920,347 B2	12/2014	Bayerlein	9,616,278 B2	4/2017	Olson
8,979,709 B2	3/2015	Toback	9,623,281 B2	4/2017	Hendrickson
8,986,165 B2	3/2015	Ashby	9,636,567 B2	5/2017	Brammer et al.
8,992,364 B2	3/2015	Law et al.	9,662,529 B2	5/2017	Miller et al.
8,992,387 B2	3/2015	Watterson et al.	9,675,839 B2	6/2017	Dalebout
D726,476 S	4/2015	Ercanbrack	9,682,307 B2	6/2017	Dalebout
9,011,291 B2	4/2015	Birrell	9,694,234 B2	7/2017	Dalebout et al.
9,028,368 B2	5/2015	Ashby et al.	9,694,242 B2	7/2017	Ashby
9,028,370 B2	5/2015	Watterson	9,700,751 B2	7/2017	Verdi
9,039,578 B2	5/2015	Dalebout	9,737,755 B2	8/2017	Dalebout
D731,011 S	6/2015	Buchanan	9,750,454 B2	9/2017	Walke
9,044,635 B2	6/2015	Lull	9,757,605 B2	9/2017	Olson et al.
9,072,930 B2	7/2015	Ashby et al.	9,764,186 B2	9/2017	Dalebout
9,119,983 B2	9/2015	Rhea	9,767,785 B2	9/2017	Ashby
9,119,988 B2	9/2015	Murray	9,776,032 B2	10/2017	Moran
9,123,317 B2	9/2015	Watterson et al.	9,795,822 B2	10/2017	Smith et al.
9,126,071 B2	9/2015	Smith	9,795,855 B2	10/2017	Jafarifesharaki
9,126,072 B2	9/2015	Watterson	9,808,672 B2	11/2017	Dalebout
9,138,615 B2	9/2015	Olson et al.	9,849,326 B2	12/2017	Smith
9,142,139 B2	9/2015	Watterson et al.	D807,445 S	1/2018	Gettle
9,144,703 B2	9/2015	Dalebout et al.	9,878,200 B2	1/2018	Edmondson
9,149,683 B2	9/2015	Smith	9,878,210 B2	1/2018	Watterson
9,170,223 B2	10/2015	Hyun	9,889,334 B2	2/2018	Ashby et al.
9,186,535 B2	11/2015	Ercanbrack	9,889,339 B2	2/2018	Douglass
9,186,549 B2	11/2015	Watterson et al.	9,937,376 B2	4/2018	McInelly et al.
9,186,552 B1	11/2015	Deal	9,937,377 B2	4/2018	McInelly et al.
D746,388 S	12/2015	Hockridge	9,937,378 B2	4/2018	Dalebout et al.
9,211,433 B2	12/2015	Hall	9,937,379 B2	4/2018	Mortensen
9,227,101 B2	1/2016	Maguire	9,943,719 B2	4/2018	Smith et al.
9,233,272 B2	1/2016	Villani	9,943,722 B2	4/2018	Dalebout
9,254,409 B2	2/2016	Dalebout et al.	9,948,037 B2	4/2018	Ashby
9,254,416 B2	2/2016	Ashby	9,968,816 B2	5/2018	Olson et al.
9,278,248 B2	3/2016	Tyger	9,968,821 B2	5/2018	Finlayson et al.
9,278,249 B2	3/2016	Watterson	9,968,823 B2	5/2018	Cutler
9,278,250 B2	3/2016	Buchanan	9,980,465 B2	5/2018	Hayashi
9,289,648 B2	3/2016	Watterson	10,010,755 B2	7/2018	Watterson
			10,010,756 B2	7/2018	Watterson
			10,029,145 B2	7/2018	Douglass
			D826,350 S	8/2018	Hochstrasser
			10,046,196 B2	8/2018	Ercanbrack

US 10,953,268 B1

Page 6

(56)

References Cited

U.S. PATENT DOCUMENTS

D827,733	S	9/2018	Hochstrasser	2005/0164837	A1	7/2005	Anderson et al.
10,065,064	B2	9/2018	Smith et al.	2005/0164839	A1	7/2005	Watterson et al.
10,071,285	B2	9/2018	Smith et al.	2005/0272577	A1	12/2005	Olson et al.
10,085,586	B2	10/2018	Smith et al.	2005/0277520	A1	12/2005	Van Waes
10,086,254	B2	10/2018	Watterson	2006/0035755	A1	2/2006	Dalebout et al.
10,118,064	B1	11/2018	Cox	2006/0035768	A1	2/2006	Kowalllis et al.
10,136,842	B2	11/2018	Ashby	2006/0135322	A1	6/2006	Rocker
10,186,161	B2	1/2019	Watterson	2006/0148622	A1	7/2006	Chen
10,188,890	B2	1/2019	Olson et al.	2006/0217237	A1	9/2006	Rhodes
10,207,143	B2	2/2019	Dalebout	2006/0240955	A1	10/2006	Pu
10,207,145	B2	2/2019	Tyger	2006/0240959	A1	10/2006	Huang
10,207,147	B2	2/2019	Ercanbrack	2006/0252613	A1	11/2006	Barnes et al.
10,207,148	B2	2/2019	Powell	2007/0066448	A1	3/2007	Pan
10,212,994	B2	2/2019	Watterson	2007/0117683	A1	5/2007	Ercanbrack et al.
10,220,259	B2	3/2019	Brammer	2007/0123395	A1	5/2007	Ellis
10,226,396	B2	3/2019	Ashby	2007/0173392	A1	7/2007	Stanford
10,226,664	B2	3/2019	Dalebout	2007/0197346	A1	8/2007	Seliber
10,252,109	B2	4/2019	Watterson	2007/0197353	A1	8/2007	Hundley
10,258,828	B2	4/2019	Dalebout	2007/0232463	A1	10/2007	Wu
10,272,317	B2	4/2019	Watterson	2007/0254778	A1	11/2007	Ashby
10,279,212	B2	5/2019	Dalebout et al.	2007/0287601	A1	12/2007	Burck et al.
10,293,211	B2	5/2019	Watterson et al.	2008/0051256	A1	2/2008	Ashby et al.
D852,292	S	6/2019	Cutler	2008/0119337	A1	5/2008	Wilkins et al.
10,343,017	B2	7/2019	Jackson	2008/0242511	A1	10/2008	Munoz
10,376,736	B2	8/2019	Powell et al.	2008/0242520	A1	10/2008	Hubbard
10,388,183	B2	8/2019	Watterson	2008/0300110	A1	12/2008	Smith et al.
10,391,361	B2	8/2019	Watterson	2009/0036276	A1	2/2009	Loach
D864,320	S	10/2019	Weston	2009/0105052	A1	4/2009	Dalebout et al.
D864,321	S	10/2019	Weston	2010/0197462	A1	8/2010	Piane, Jr.
10,426,989	B2	10/2019	Dalebout	2010/0242246	A1	9/2010	Dalebout et al.
10,433,612	B2	10/2019	Ashby	2010/0255965	A1	10/2010	Chen
10,441,840	B2	10/2019	Dalebout et al.	2010/0317488	A1	12/2010	Cartaya
10,449,416	B2	10/2019	Dalebout	2011/0009249	A1	1/2011	Campanaro et al.
D868,090	S	12/2019	Cutler et al.	2011/0082013	A1	4/2011	Bastian
D868,909	S	12/2019	Cutler	2011/0131005	A1	6/2011	Ueshima
10,492,519	B2	12/2019	Capell	2011/0281691	A1	11/2011	Ellis
10,493,349	B2	12/2019	Watterson	2012/0065034	A1	3/2012	Loach
10,500,473	B2	12/2019	Watterson	2012/0088638	A1	4/2012	Lull
10,543,395	B2	1/2020	Powell et al.	2012/0237911	A1	9/2012	Watterson
10,561,877	B2	2/2020	Workman	2012/0277068	A1	11/2012	Zhou et al.
10,561,893	B2	2/2020	Chatterton	2012/0295774	A1	11/2012	Dalebout et al.
10,561,894	B2	2/2020	Dalebout	2013/0014321	A1	1/2013	Sullivan
10,569,121	B2	2/2020	Watterson	2013/0065732	A1	3/2013	Hopp
10,569,123	B2	2/2020	Hochstrasser	2013/0090216	A1	4/2013	Jackson
10,668,320	B2	6/2020	Watterson	2013/0109543	A1	5/2013	Reyes
10,758,767	B2	9/2020	Olson et al.	2013/0123073	A1	5/2013	Olson et al.
2001/0016542	A1	8/2001	Yoshimura	2013/0123083	A1	5/2013	Sip
2002/0013200	A1	1/2002	Sechrest	2013/0165195	A1	6/2013	Watterson
2002/0016235	A1	2/2002	Ashby et al.	2013/0172152	A1	7/2013	Watterson
2002/0025888	A1	2/2002	Germanton	2013/0172153	A1	7/2013	Watterson
2002/0077221	A1	6/2002	Dalebout et al.	2013/0178334	A1	7/2013	Brammer
2002/0086779	A1	7/2002	Wilkinson	2013/0178768	A1	7/2013	Dalebout
2002/0128127	A1	9/2002	Chen	2013/0190136	A1	7/2013	Watterson
2002/0159253	A1	10/2002	Dalebout et al.	2013/0196298	A1	8/2013	Watterson
2003/0032528	A1	2/2003	Wu et al.	2013/0196821	A1	8/2013	Watterson et al.
2003/0032531	A1	2/2003	Simonson	2013/0196822	A1	8/2013	Watterson et al.
2003/0032535	A1	2/2003	Wang et al.	2013/0218585	A1	8/2013	Watterson
2003/0045406	A1	3/2003	Stone	2013/0244836	A1	9/2013	Maughan
2003/0171189	A1	9/2003	Kaufman	2013/0267383	A1	10/2013	Watterson
2003/0171192	A1	9/2003	Wu et al.	2013/0268101	A1	10/2013	Brammer
2003/0176261	A1	9/2003	Simonson et al.	2013/0274067	A1	10/2013	Watterson et al.
2003/0181293	A1	9/2003	Baatz	2013/0281241	A1	10/2013	Watterson
2004/0043873	A1	3/2004	Wilkinson et al.	2013/0303334	A1	11/2013	Adhami et al.
2004/0091307	A1	5/2004	James	2013/0337981	A1	12/2013	Habing
2004/0102292	A1	5/2004	Pyles et al.	2014/0024499	A1	1/2014	Watterson
2004/0171464	A1	9/2004	Ashby et al.	2014/0073970	A1	3/2014	Ashby
2004/0171465	A1	9/2004	Hald et al.	2014/0121071	A1	5/2014	Strom et al.
2004/0176227	A1	9/2004	Endelman	2014/0135173	A1	5/2014	Watterson
2004/0204294	A2	10/2004	Wilkinson	2014/0187389	A1	7/2014	Berg
2005/0049117	A1	3/2005	Rodgers	2014/0235409	A1	8/2014	Salmon et al.
2005/0049123	A1	3/2005	Dalebout et al.	2014/0274574	A1	9/2014	Shorten et al.
2005/0077805	A1	4/2005	Dalebout et al.	2014/0274579	A1	9/2014	Olson
2005/0107229	A1	5/2005	Wickens	2014/0287884	A1	9/2014	Buchanan
2005/0130814	A1	6/2005	Nitta et al.	2014/0309085	A1	10/2014	Watterson et al.
2005/0148445	A1	7/2005	Carle	2014/0357457	A1	12/2014	Boekema
				2014/0371035	A1	12/2014	Mortensen et al.
				2015/0038300	A1	2/2015	Forhan et al.
				2015/0182779	A1	7/2015	Dalebout
				2015/0182781	A1	7/2015	Watterson

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Page 7

(56) **References Cited**
U.S. PATENT DOCUMENTS

2015/0238817	A1	8/2015	Watterson
2015/0250418	A1	9/2015	Ashby
2015/0251055	A1	9/2015	Ashby
2015/0253210	A1	9/2015	Ashby et al.
2015/0253735	A1	9/2015	Watterson
2015/0253736	A1	9/2015	Watterson
2015/0258560	A1	9/2015	Ashby
2015/0306440	A1	10/2015	Bucher et al.
2015/0352396	A1	12/2015	Dalebout
2015/0367161	A1	12/2015	Wiegardt
2016/0058335	A1	3/2016	Ashby
2016/0063615	A1	3/2016	Watterson
2016/0092909	A1	3/2016	Watterson
2016/0101311	A1	4/2016	Workman
2016/0107065	A1	4/2016	Brammer
2016/0121074	A1	5/2016	Ashby
2016/0148535	A1	5/2016	Ashby
2016/0148536	A1	5/2016	Ashby
2016/0158595	A1	6/2016	Dalebout
2016/0206248	A1	7/2016	Sartor et al.
2016/0206922	A1	7/2016	Dalebout et al.
2016/0250519	A1	9/2016	Watterson
2016/0253918	A1	9/2016	Watterson
2016/0303453	A1	10/2016	Kim
2016/0339298	A1	11/2016	Kats
2016/0346595	A1	12/2016	Dalebout et al.
2016/0346617	A1	12/2016	Srugo et al.
2017/0036053	A1	2/2017	Smith et al.
2017/0056711	A1	3/2017	Dalebout et al.
2017/0056715	A1	3/2017	Dalebout et al.
2017/0056726	A1	3/2017	Dalebout et al.
2017/0124912	A1	5/2017	Ashby et al.
2017/0193578	A1	7/2017	Watterson
2017/0266481	A1	9/2017	Dalebout
2017/0266483	A1	9/2017	Dalebout et al.
2017/0266489	A1	9/2017	Douglass et al.
2017/0266532	A1	9/2017	Watterson
2017/0266533	A1	9/2017	Dalebout
2017/0270820	A1	9/2017	Ashby
2017/0319941	A1	11/2017	Smith et al.
2018/0001135	A1	1/2018	Powell
2018/0036585	A1	2/2018	Powell
2018/0084817	A1	3/2018	Capell et al.
2018/0085630	A1	3/2018	Capell et al.
2018/0089396	A1	3/2018	Capell et al.
2018/0099116	A1	4/2018	Ashby
2018/0099179	A1	4/2018	Chatterton et al.
2018/0099180	A1	4/2018	Wilkinson
2018/0099205	A1	4/2018	Watterson
2018/0111034	A1	4/2018	Watterson
2018/0117383	A1	5/2018	Workman
2018/0117385	A1	5/2018	Watterson et al.
2018/0117393	A1	5/2018	Ercanbrack
2018/0154205	A1	6/2018	Watterson
2018/0154207	A1	6/2018	Hochstrasser
2018/0154208	A1	6/2018	Powell et al.
2018/0154209	A1	6/2018	Watterson
2018/0200566	A1	7/2018	Weston
2019/0058370	A1	2/2019	Tinney
2019/0080624	A1	3/2019	Watterson
2019/0151698	A1	5/2019	Olson et al.
2019/0168072	A1	6/2019	Brammer
2019/0178313	A1	6/2019	Wrobel
2019/0192898	A1	6/2019	Dalebout
2019/0192952	A1	6/2019	Powell
2019/0209893	A1	7/2019	Watterson
2019/0223612	A1	7/2019	Watterson
2019/0232112	A1	8/2019	Dalebout
2019/0269958	A1	9/2019	Dalebout et al.
2019/0269971	A1	9/2019	Capell et al.
2019/0275366	A1	9/2019	Powell
2019/0282852	A1	9/2019	Dalebout
2019/0328079	A1	10/2019	Ashby et al.
2019/0329091	A1	10/2019	Powell et al.
2019/0376585	A1	12/2019	Buchanan

2020/0009417	A1	1/2020	Dalebout
2020/0016459	A1	1/2020	Smith
2020/0254295	A1	8/2020	Watterson
2020/0254309	A1	8/2020	Watterson
2020/0338389	A1	10/2020	Dalebout et al.
2020/0391069	A1	12/2020	Olson et al.

FOREIGN PATENT DOCUMENTS

CN	101784308	11/2001
CN	1658929	8/2005
CN	1708333	12/2005
CN	2841072	Y 11/2006
CN	201516258	6/2010
CN	201410258	Y 2/2014
CN	103801048	5/2014
CN	203989681	12/2014
CN	10488413	9/2015
CN	105848733	8/2016
CN	104884133	B 2/2018
CN	106470739	B 6/2019
CN	110035801	7/2019
EP	1188460	3/2002
EP	2969058	1/2016
EP	3086865	A1 11/2016
EP	3086865	A1 1/2020
EP	3086865	2/2020
EP	3623020	3/2020
EP	2969058	5/2020
JP	2002-011114	1/2002
JP	2013543749	12/2013
KR	100829774	5/2008
SU	1533710	1/1990
TW	1339127	8/2008
TW	M422981	2/2012
TW	M464203	11/2013
TW	M495871	2/2015
TW	M504568	3/2015
TW	201821129	A 6/2018
TW	201821130	A 6/2018
TW	201601802	A 12/2018
WO	1989002217	3/1989
WO	1997006859	2/1997
WO	2000030717	6/2000
WO	2002053234	A1 7/2002
WO	2007015096	A3 2/2007
WO	2009/000059	12/2008
WO	2009/014330	1/2009
WO	2009014330	1/2009
WO	2014153158	9/2014
WO	2015/100429	7/2015
WO	2015191445	12/2015
WO	2018106598	6/2018
WO	2018106603	6/2018

OTHER PUBLICATIONS

Exxentric, Movie Archives, obtained from The Wayback Machine for <http://exxentric.com/movies/> accessed for Aug. 19, 2015.

International Search Report & Written Opinion for PCT Application No. PCT/US2014/072390, dated Mar. 27, 2015, 9 pages.

Supplemental European Search Report for European Application No. 14874303, dated May 10, 2017, 6 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petition for Inter Partes Review of U.S. Pat. No. 9,403,047, filed May 5, 2017; 76 pages (paper 2).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Olson, U.S. Pat. No. 9,403,047, 16 pages, (Petition EX. 1001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Sleamaker, U.S. Pat. No. 5,354,251, 14 pages, (Petition EX. 1002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Hanoun, U.S. Publication No. 2007-0232452, 28 pages, (Petition EX. 1003).

US 10,953,268 B1

Page 8

(56)

References Cited

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Six-Pak, Printed Publication TuffStuff Fitness Six-Pak Trainer Owner's Manual, 19 pages, (Petition EX 1004).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Ehrenfried, U.S. Pat. No. 5,738,611, 19 pages, (Petition EX. 1005).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Kleinman, International Publication No. WO2008/152627, 65 pages, (Petition EX. 1006).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Lee Rawls, (Petition EX. 1007).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, U.S. Pat. No. 9,403,047 File history, 130 pages, (Petition EX. 1008).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, U.S. Appl. No. 61/920,834, 38 pages, (Petition EX. 1009).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Christopher Butler, 26 pages, (Petition EX. 1010).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Power of Attorney, filed May 5, 2017, 2 pages (paper 2).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Mandatory Notice to Patent Owner, filed May 19, 2017, 4 pages (paper 3).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Power of Attorney, filed May 19, 2017, 3 pages (paper 4).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Notice of Accord Filing Date, filed Jun. 9, 2017, 5 pages (paper 5).
U.S. Appl. No. 61/786,007, filed Mar. 14, 2013, titled "Strength Training Apparatus with Flywheel and Related Methods", 28 pages.
U.S. Appl. No. 62/009,607, filed Jun. 9, 2014, titled "Cable System Incorporated into a Treadmill", 32 pages.
International Search Report & Written Opinion for PCT Application No. PCT/US2014/029353, dated Aug. 4, 2014, 9 pages.
Supplemental European Search Report for European Application No. 14768130, dated Oct. 11, 2016, 9 pages.
U.S. Appl. No. 15/472,954, filed Mar. 29, 2017, titled "Strength Training Apparatus with Flywheel and Related Methods", 22 pages.
U.S. Appl. No. 15/976,496, filed May 10, 2018, titled "Magnetic Resistance Mechanism in a Cable Machine", 36 pages.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petition for Inter Partes Review of U.S. Pat. No. 9,616,276 (Claims 1-4, 7-10), filed May 5, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Dalebout et al., U.S. Pat. No. 9,616,276, (Petition EX. 1001).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Wu, U.S. Publication No. 20030171192, (Petition EX. 1002).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Webb, U.S. Publication No. 20030017918, (Petition EX. 1003).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Watson, U.S. Publication No. 20060234840, (Petition EX. 1004).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Jones, U.S. Pat. No. 4,798,378, (Petition EX. 1005).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Zhou et al., U.S. Pat. No. 8,517,899, (Petition EX. 1006).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Loach, U.S. Publication No. WO2007015096, (Petition EX. 1007).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Rawls Declaration, Part 1 & 2, (Petition EX. 1008).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, U.S. Pat. No. 9,616,276 File History, (Petition EX. 1009).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, U.S. Appl. No. 61/786,007 File History, (Petition EX. 1010).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Sawicky, U.S. Pat. No. 5,042,798, (Petition EX. 1011).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Power of Attorney, filed May 5, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Mandatory Notice to Patent Owner, filed May 19, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Power of Attorney, filed May 19, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Notice of Accord Filing Date, filed Jun. 6, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petition for Inter Partes Review of U.S. Pat. No. 9,616,276 (Claims 1-20) filed May 5, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Dalebout et al., U.S. Pat. No. 9,616,276, (Petition EX. 1001).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Wu, U.S. Publication No. 20030171192, (Petition EX. 1002).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Webb, U.S. Publication No. 20030017918, (Petition EX. 1003).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Watson, U.S. Publication No. 20060234840, (Petition EX. 1004).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Jones, U.S. Pat. No. 4,798,378, (Petition EX. 1005).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Zhou et al., U.S. Pat. No. 8,517,899, (Petition EX. 1006).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Loach, U.S. Publication No. WO2007015096, (Petition EX. 1007).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Rawls Declaration, Part 1 & 2, (Petition EX. 1008).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, U.S. Pat. No. 9,616,276 File History, (Petition EX. 1009).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, U.S. Appl. No. 61/786,007 File History, (Petition EX. 1010).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Sawicky, U.S. Pat. No. 5,042,798, (Petition EX. 1011).
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Power of Attorney, filed May 5, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Mandatory Notice to Patent Owner, filed May 19, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Power of Attorney, filed May 19, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Notice of Accord Filing Date, filed Jun. 6, 2017.
Chinese Office Action for Chinese Patent Application No. 201480003701.9 dated Apr. 6, 2016.
Chinese Search Report for Chinese Patent Application No. 2014800708329 dated Jun. 2, 2017.
Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Tyson Hottinger in Support of Motion for Admission Pro Hac Vice, filed Feb. 1, 2018 (EX 2001).

US 10,953,268 B1

Page 9

(56) **References Cited**

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Transcript of Deposition of R. Lee Rawls, filed Mar. 5, 2018 (Ex 2002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order Conduct of Proceedings, filed May 7, 2018 (Paper 20).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Decision Institution of Inter Partes Review, filed Dec. 4, 2017 (Paper 6).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Scheduling Order, filed Dec. 4, 2017 (Paper 7).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order, filed Jan. 19, 2018 (Paper 8).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Notice of Deposition of R. Lee Rawls, filed Jan. 19, 2018 (Paper 9).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Unopposed Motion for Pro Hac Vice Admission of Tyson Hottinger, filed Feb. 1, 2018 (Paper 10).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Current Exhibit List, filed Feb. 1, 2018 (Paper 11).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Updated Notice of Deposition of R. Lee Rawls, filed Feb. 1, 2018 (Paper 12).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Granting Motion of Pro Hac Vice Admission of Mr. Hottinger, filed Feb. 12, 2018 (Paper 13).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Mandatory Notices, filed Feb. 20, 2018 (Paper 14).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Power of Attorney, filed Feb. 20, 2018 (Paper 15).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Motion to Amend, filed Mar. 5, 2018 (Paper 16).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List of Patent Owner, filed Mar. 5, 2018 (Paper 17).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of Proceedings 37 C.F.R. Sec 42.5, filed Apr. 27, 2018 (Paper 18).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of Proceedings 37 C.F.R. Sec 42.5, filed May 7, 2018 (Paper 19).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Declaration of Tyson Hottinger in Support of Motion for Admission Pro Hac Vice, (Patent Owner EX. 2001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Claim Listing of Proposed Substitute Claims for Patent Owner Motion to Amend, (Patent Owner EX. 2002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of U.S. Pat. No. 9,616,276, (Patent Owner EX. 2003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of U.S. Pat. No. 9,616,276, (Patent Owner EX. 2004).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of U.S. Pat. No. 9,254,409 (Patent Owner EX. 2005).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of U.S. Pat. No. 9,254,409 (Patent Owner EX. 2006).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Provisional Patent Specification of U.S. Appl. No. 61/786,007, (Patent Owner EX. 2007).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Provisional Patent Drawings of U.S. Appl. No. 61/786,007, (Patent Owner EX. 2008).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of U.S. Appl. No. 13/754,361 (Patent Owner EX. 2009).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of U.S. Appl. No. 13/754,361 (Patent Owner EX. 2010).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Webster Dictionary p. 2211 (Merriam-Webster, Inc. 1961, 2002) (EX. 3001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner Preliminary Response to Petition, filed Sep. 5, 2017 (Paper 6).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Decision Institution of Inter Partes Review, filed Dec. 4, 2017 (Paper 7).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Scheduling Order, filed Dec. 4, 2017 (Paper 8).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of Proceeding, filed Jan. 19, 2018 (Paper 9).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Notice of Deposition of R. Lee Rawls, filed Jan. 19, 2018 (Paper 10).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Unopposed Motion for Pro Hac Vice Admission of Tyson Hottinger, filed Feb. 1, 2018 (Paper 11).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List for Patent Owner, filed Feb. 1, 2018 (Paper 12).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Updated Notice of Deposition of R. Lee Rawls, Feb. 1, 2018 (Paper 13).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Granting Motion for Pro Hac Vice Admission, filed Feb. 12, 2018 (Paper 14).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Mandatory Notices, filed Feb. 20, 2018 (Paper 15).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Power of Attorney, filed Feb. 20, 2018 (Paper 16).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owners Motion to Amend, filed Mar. 5, 2018 (Paper 17).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed Mar. 5, 2018 (Paper 18).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of Proceedings, filed Apr. 27, 2018 (Paper 19).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of Proceedings, filed May 7, 2018 (Paper 20).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration of Tyson Hottinger in Support of Motion for Admission Pro Hac Vice, (Patent Owner EX. 2001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Claim Listing of Proposed Substitute Claims for Patent Owner Motion to Amend, (Patent Owner EX. 2002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of U.S. Appl. No. 15/019,088, (Patent Owner EX. 2003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of U.S. Appl. No. 15/019,088, (Patent Owner EX. 2004).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of U.S. Appl. No. 14/213,793, (Patent Owner EX. 2005).

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(56)

References Cited

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of U.S. Appl. No. 14/213,793, (Patent Owner EX. 2006).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of U.S. Appl. No. 61/786,007, (Patent Owner EX. 2007).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of U.S. Appl. No. 61/786,007, (Patent Owner EX. 2008).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of U.S. Appl. No. 13/754,361, (Patent Owner EX. 2009).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of U.S. Appl. No. 13/754,361, (Patent Owner EX. 2010).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Webster Dictionary p. 2211 (Merriam-Webster, Inc. 1961, 2002) (EX. 3001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Reply in Support of Petition for Inter Partes Review; filed Jun. 4, 2018; 18 pages (paper 21).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Motion for Pro Hac Vice Admission, filed Jun. 6, 2018; 5 pages (paper 22).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Affidavit of Lane M. Polozola in support of Petitioner's Motion of Pro Hac Vice Admission Under 37 C.F.R. 42.10(c), filed Jun. 6, 2018, 4 pages (exhibit 1011).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order granting Motion for Pro Hac Vice Admission—37 C.F.R. 42.10(c), filed Jun. 14, 2018; 4 pages (paper 23).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Mandatory Notices, filed Jun. 20, 2018; 4 pages (paper 24).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Power of Attorney, filed Jun. 20, 2018; 3 pages (paper 25).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Request for Oral Argument, filed Jul. 25, 2018; 4 pages; (paper 26).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Patent Owner's Request for Oral Argument, filed Jul. 25, 2018; 4 pages (paper 27).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order 37 C.F.R. 42.70, filed Aug. 14, 2018, 5 pages (paper 28).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Current Exhibit List of Patent Owner, filed Aug. 24, 2018, 3 pages (paper 29).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order Conduct of Proceedings 37 C.F.R. 42.5, filed Aug. 24, 2018, 4 pages (paper 30).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Exhibit List, filed Aug. 24, 2018, 4 pages (paper 31).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Petitioner's Oral Argument Demonstrative Exhibits, filed Aug. 24, 2018, 31 pages (exhibit 1012).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Patent Owner Demonstrative Exhibits; filed Aug. 24, 2018, 10 pages (exhibit 2003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Motion for Pro Hac Vice Admission, filed Jun. 6, 2018, 5 pages (paper 21).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Objections to Evidence, filed Jun. 7, 2018, 5 pages (paper 22).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Notice of Deposition of Christopher Cox, filed Jun. 13, 2018, 3 pages (paper 23).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order—Granting Motion for Pro Hac Vice Admission, filed Jun. 14, 2018, 4 pages (paper 24).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Mandatory Notices, filed Jun. 20, 2018, 4 pages, (paper 25).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Power of Attorney, filed Jun. 20, 2018, 3 pages, (paper 26).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Reply to Petitioners Opposition to Motions to Amend, filed Jul. 5, 2018, 28 pages, (paper 27).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List for Patent Owner, filed Jul. 5, 2018, 4 pages, (paper 28).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owners Updated Mandatory Notices, filed Jul. 5, 2018, 4 pages, (paper 29).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Notice of Deposition Scott Ganaja, filed Jul. 11, 2018, 3 pages (paper 30).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Joint Notice of Stipulation to Modify Scheduling Order, filed Jul. 12, 2018, 3 pages, (paper 31).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Objections to Evidence, filed Jul. 12, 2018, 4 pages (paper 32).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Amended Notice of Deposition Scott Ganaja, filed Jul. 12, 2018, 3 pages (paper 33).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of Proceeding 37 C.F.R. 42.5, filed Jul. 20, 2018, 5 pages, (paper 34).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Sur-Reply ISO Opposition to Motions to Amend, filed Aug. 1, 2018, 19 pages, (paper 35).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Joint Notice of Stipulation to Modify Scheduling Order, filed Aug. 3, 2018, 3 pages (paper 36).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of the Proceeding, filed Aug. 7, 2018, 4 pages (paper 37).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Objections to Petitioners Sur Reply, filed Aug. 8, 2018, 5 pages (paper 38).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Request for Oral Argument, filed Aug. 10, 2018, 4 pages, (paper 39).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Request for Oral Argument, filed Aug. 10, 2018, 4 pages, (paper 40).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Motion to Exclude Evidence, filed Aug. 10, 2018, 11 pages (paper 41).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order 37 C.F.R. 42.70, filed Aug. 14, 2018, 5 pages (paper 42).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Opposition to Patent Owner's Motion to Exclude, filed Aug. 16, 2018, 18 pages (paper 44).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Reply in support of Motion to Exclude, filed Aug. 22, 2018, 8 pages, (paper 45).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List of Patent Owner, filed Aug. 24, 2018, 4 pages (paper 46).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order re PO Sur-Rebuttal at Hearing, filed Aug. 24, 2018, 4 pages (paper 47).

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(56) **References Cited**

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1012—U.S. Pat. No. 8,585,561 (Watt), filed Jun. 4, 2018, 32 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1013—U.S. Pat. No. 9,044,635 (Lull), filed Jun. 4, 2018, 21 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1014—U.S. Pat. No. 7,740,563 (Dalebout), filed Jun. 4, 2018, 31 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1015—US20020055418A1 (Pyles), filed Jun. 4, 2018, 9 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1016—US20120258433A1 (Hope), filed Jun. 4, 2018, 51 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1017—U.S. Pat. No. 7,771,320 (Riley), filed Jun. 4, 2018, 44 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1018—Declaration of Christopher Cox in Support of Petitioners Oppositions to Patent Owners Motions to Amend, filed Jun. 4, 2018, 739 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1019—Affidavit of Lane M. Polozola in Support of Petitioners Motion for Pro Hac Vice Admission, filed Jun. 6, 2018, 4 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1020—S. Ganaja Depo Transcript, filed Aug. 1, 2018, 58 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1021—Petitioner's Demonstrative Exhibits, filed Aug. 24, 2018, 92 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2011—Declaration of Scott Ganaja in Support of Patent Owner's Reply to Petitioners Opposition to Patent Owners Motion to Amend, filed Jul. 5, 2018, 42 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2012—Declaration of Richard Ferraro in Support of Patent Owner's Reply to Petitioners Opposition to Patent Owners Motion to Amend, filed Jul. 5, 2018, 35 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2013—Cox, Christopher Depo Transcript Jun. 26, 2018, filed Jul. 5, 2018, 26 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2014—Patent Owner Demonstrative Exhibits, filed Aug. 24, 2018, 21 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Opposition to Patent Owner's Motion to Amend, filed Jun. 4, 2018, 44 pages (paper 21).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioners Motion for Pro Hac Vice Admission, filed Jun. 6, 2018, 5 pages (paper 22).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Objections to Evidence, filed Jun. 7, 2018, 5 pages (paper 23).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration R. Lee Rawls, Part 1, dated May 12, 2017, 447 pages, (paper 24).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration R. Lee Rawls, Part 2, dated May 12, 2017, 216 pages, (paper 24).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order granting Motion for Pro Hac Vice Admission, filed Jun. 14, 2018, 4 pages (paper 25).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Mandatory Notices, filed Jun. 20, 2018, 4 pages, (paper 26).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Power of Attorney, filed Jun. 20, 2018, 3 pages, (paper 27).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Reply to Opposition to Motions to Amend, filed Jul. 5, 2018, 28 pages, (paper 28).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed Jul. 5, 2018, 4 pages, (paper 29).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Updated Mandatory Notices, filed Jul. 5, 2018, 4 pages, (paper 30).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Notice of Deposition of Scott Ganaja, filed Jul. 11, 2018, 3 pages (paper 31).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Joint Notice of Stipulation to Modify Scheduling Order, filed Jul. 12, 2018, 3 pages (paper 32).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Objections to Patent Owner's Evidence, filed Jul. 12, 2018, 4 pages, (paper 33).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Amended Notice of Deposition of Scott Ganaja, filed Jul. 12, 2018, 3 pages, (paper 34).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order—Conduct of the Proceeding, 37 C.F.R. 42.5, filed Jul. 20, 2018, 5 pages (paper 35).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Sur-Reply in Support of Opposition to Patent Owners Motions to Amend, filed Aug. 1, 2018, 19 pages, (paper 36).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Joint Notice of Stipulation to Modify Scheduling Order, filed Aug. 3, 2018, 3 pages (paper 37).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order—Conduct of the Proceeding, 37 C.F.R. 42.5, filed Aug. 7, 2018, 4 pages (paper 38).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Objections to Petitioners Sur Reply, filed Aug. 2, 2018, 5 pages, (paper 39).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Request for Oral Argument, filed Aug. 10, 2018, 4 pages, (paper 40).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Request for Oral Argument, filed Aug. 10, 2018, 4 pages, (paper 41).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Motion to Exclude Evidence, filed Aug. 10, 2018, 11 pages (paper 42).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order—Oral Hearing 37 C.F.R. 42.70, filed Aug. 14, 2018, 5 pages (paper 43).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Opposition to Patent Owner's Motion to Exclude Evidence, filed Aug. 16, 2018, 18 pages (paper 44).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owners Reply in Support of its Motion to Exclude, filed Aug. 22, 2018, 8 pages, (paper 46).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed Aug. 24, 2018, 4 pages (paper 47).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of the Proceedings—37 C.F.R. 42.5, filed Aug. 24, 2018, 4 pages, (paper 48).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Exhibit List, filed Aug. 24, 2018, 5 pages, (paper 49).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1012—U.S. Pat. No. 8,585,561 (Watt), filed Jun. 4, 2018, 32 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1013—U.S. Pat. No. 9,044,635 (Lull), filed Jun. 4, 2018, 21 pages.

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(56)

References Cited

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1014—U.S. Pat. No. 7,740,563 (Dalebout), filed Jun. 4, 2018, 31 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1015—US20020055418A1 (Pyles), filed Jun. 4, 2018, 9 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1016—US20120258433A1 (Hope), filed Jun. 4, 2018, 51 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1017—U.S. Pat. No. 7,771,320 (Riley), filed Jun. 4, 2018, 44 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1018—Declaration of Christopher Cox in Support of Petitioners Oppositions to Patent Owners Motions to Amend, filed Jun. 4, 2018, 739 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1019—Affidavit of Lane M. Polozola in Support of Petitioners Motion for Pro Hac Vice Admission, filed Jun. 6, 2018, 4 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1020—Scott Ganaja Depo Transcript, filed Aug. 1, 2018, 58 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1021—Petitioner's Demonstrative Exhibits, filed Aug. 24, 2018, 92 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1011—Declaration of Scott Ganaja in Support of Patent Owner's Reply to Petitioner's Opposition to Patent Owner's Motion to Amend, filed Jul. 5, 2018, 42 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1012—Declaration of Richard Ferraro in Support of Patent Owner's Reply to Petitioner's Opposition to Patent Owner's Motion to Amend, filed Jul. 5, 2018, 35 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1013—Cox, Christopher Depo Transcript Jun. 26, 2018, filed Jul. 5, 2018, 26 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1014—Patent Owner's Demonstrative Exhibits, filed Aug. 24, 2018, 21 pages.

European Patent Office, Article 94(3) EPC Communication dated Jul. 10, 2018, issued in European Patent Application No. 14768130.8-1126, 3 pages.

United States Patent and Trademark Office; International Search Report and Written Opinion issued in application No. PCT/US2015/034665; dated Oct. 8, 2015 (14 pages).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case Nos. IPR2017-01363, IPR2017-01407, and IPR2017-01408 Record of Oral Hearing held Aug. 29, 2018; (paper 32) 104 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407—Petitioner's Updated Exhibit List, filed Aug. 24, 2018, (paper 48) 5 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Final Written Decision dated Nov. 28, 2018; (paper 33) 29 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case Nos. IPR2017-01407, Final Written Decision dated Dec. 3, 2018; (paper 50) 81 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case Nos. IPR2017-01408, Final Written Decision dated Dec. 3, 2018; (paper 51) 82 pages.

U.S. Appl. No. 16/572,272, filed Sep. 16, 2019, titled "Cable Exercise Machine", (35 pages).

U.S. Appl. No. 62/310,467, filed Mar. 18, 2016, titled "Collapsible Strength Exercise Machine", 31 pages.

U.S. Appl. No. 62/429,977, filed Dec. 5, 2016, titled "Pull Cable Resistance Mechanism in a Treadmill", 37 pages.

U.S. Appl. No. 62/429,970, filed Dec. 5, 2016, titled "Tread Belt Locking Mechanism", 37 pages.

International Bureau of WIPO; International Preliminary Report on Patentability; Int'l App No. PCT/US2017/064523 dated Jun. 11, 2019; 7 pages.

International Bureau of WIPO; International Preliminary Report on Patentability; Int'l App No. PCT/US2017/064536 dated Jun. 11, 2019; 8 pages.

Chinese Second Office Action for Chinese Patent Application No. 201480003701.9 dated Nov. 21, 2016.

Chinese Third Office Action for Chinese Patent Application No. 201480003701.9 dated Nov. 24, 2017.

Chinese Office Action for Chinese Patent Application No. 201580033332 dated Feb. 28, 2018.

Chinese Second Office Action for Chinese Patent Application No. 201580033332 dated Nov. 15, 2018.

Nordic Track Fusion CST Series; website; located at: <http://www/nordictrack.com/fusion-cst-series>; accessed on Jan. 24, 2018; 11 pages.

U.S. Appl. No. 62/804,146, filed Feb. 11, 2019, titled Cable and Power Rack Exercise Machine, 49 pages.

U.S. Appl. No. 16/780,765, filed Feb. 3, 2020, titled Cable and Power Rack Exercise Machine, 48 pages.

U.S. Appl. No. 16/787,850, filed Feb. 11, 2020, titled "Exercise Machine", 40 pages.

International Patent Application No. PCT/US20/17710, filed Feb. 11, 2020, titled "Exercise Machine", 41 pages.

First Office Action and Search Report with English translation issued in Taiwan application 106135830 dated Jun. 15, 2018.

U.S. Appl. No. 16/742,762, filed Jan. 14, 2020, titled Controlling an Exercise Machine Using a Video Workout Program, 146 pages.

U.S. Appl. No. 16/750,925, filed Jan. 2, 2020, titled Systems and Methods for an Interactive Pedaled Exercise Device, 54 pages.

U.S. Appl. No. 62/914,007, filed Oct. 11, 2019, titled Modular Exercise Device, 128 pages.

U.S. Appl. No. 62/934,291, filed Nov. 12, 2019, titled Exercise Storage System, 41 pages.

U.S. Appl. No. 62/934,297, filed Nov. 12, 2019, titled Exercise Storage System, 44 pages.

Extended European Search Report for European Application No. 17879180.2, dated Jun. 9, 2020, 8 pages.

Chinese First Office Action for Application No. 201780074846.1 dated May 9, 2020.

International Search Report and Written Opinion dated Aug. 20, 2020 issued in International Application No. PCT/US20/17710, 10 pages.

U.S. Appl. No. 29/568,648, filed Jun. 20, 2016, ICON Health & Fitness, Inc.

U.S. Appl. No. 29/702,127, filed Sep. 16, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 13/088,007, filed Apr. 15, 2011, Scott R. Watterson.

U.S. Appl. No. 15/821,386, filed Nov. 22, 2017, ICON Health & Fitness, Inc.

U.S. Appl. No. 15/973,176, filed May 7, 2018, Melanie Douglass.

U.S. Appl. No. 16/378,022, filed Apr. 8, 2019, William T. Dalebout.

U.S. Appl. No. 16/435,104, filed Jun. 7, 2019, Dale Alan Buchanan.

U.S. Appl. No. 16/506,085, filed Jul. 9, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/697,833, filed Jul. 13, 2018, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/796,952, filed Jan. 25, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/804,146, filed Feb. 11, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/804,685, filed Feb. 12, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/852,118, filed May 22, 2019, David Hays.

U.S. Appl. No. 62/866,576, filed Jun. 25, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/887,391, filed Aug. 15, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/887,398, filed Aug. 15, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/897,113, filed Sep. 9, 2019, ICON Health & Fitness, Inc.

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(56)

References Cited

OTHER PUBLICATIONS

U.S. Appl. No. 62/842,118, filed May 23, 2019, ICON Health & Fitness, Inc.

English Translation of Search Report for Taiwan Patent Application No. 104131458 dated Jun. 3, 2016.

English Translation of Search Report for Taiwan Patent Application No. 105126694 dated Oct. 3, 2017.

International Search Report and Written Opinion issued in PCT/US2016/048692 dated Dec. 1, 2016.

International Search Report and Written Opinion issued in PCT/US2017/023002 dated Jun. 28, 2017.

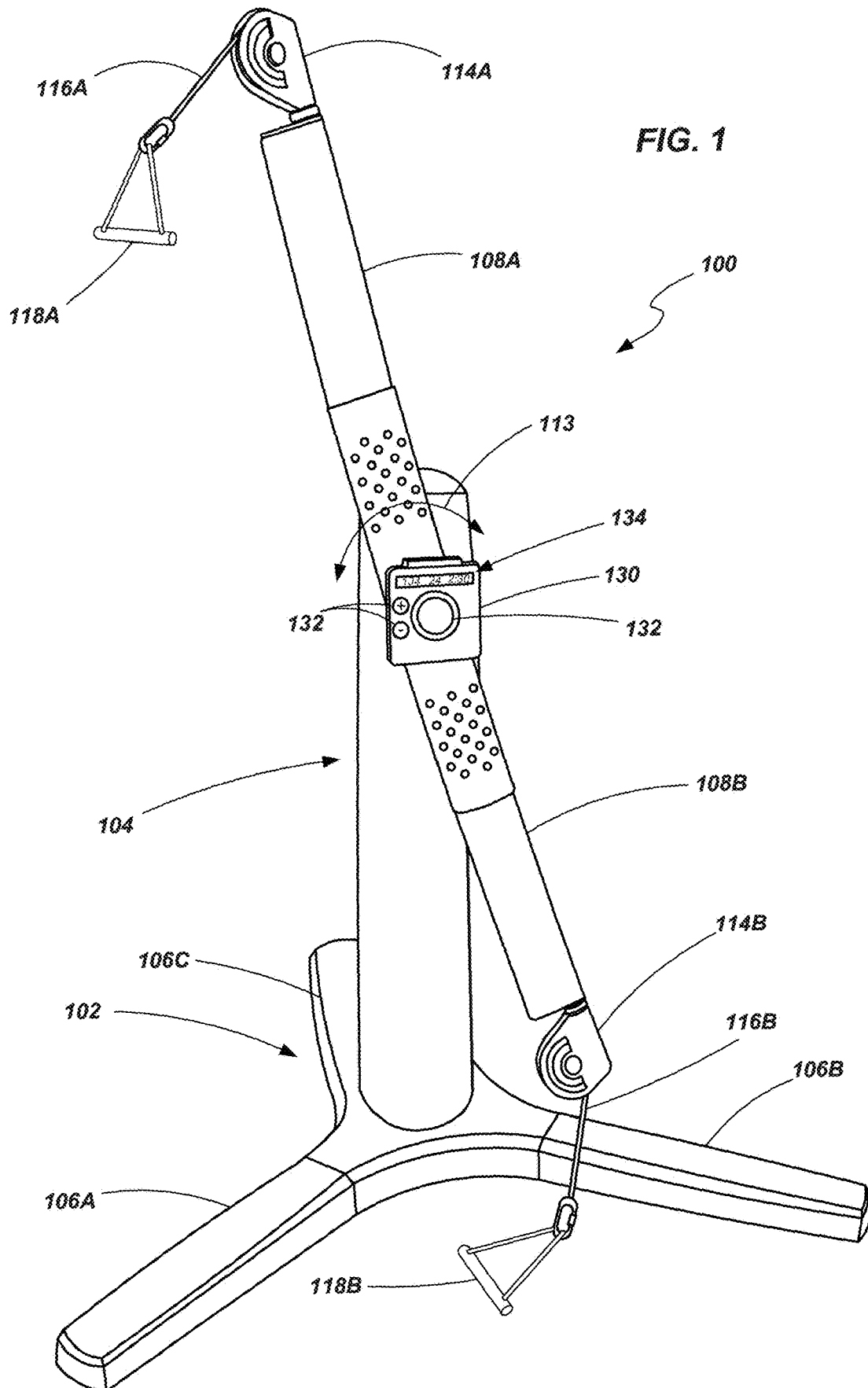
International Search Report and Written Opinion issued in PCT/US2017/022989 dated May 23, 2017.

U.S. Patent

Mar. 23, 2021

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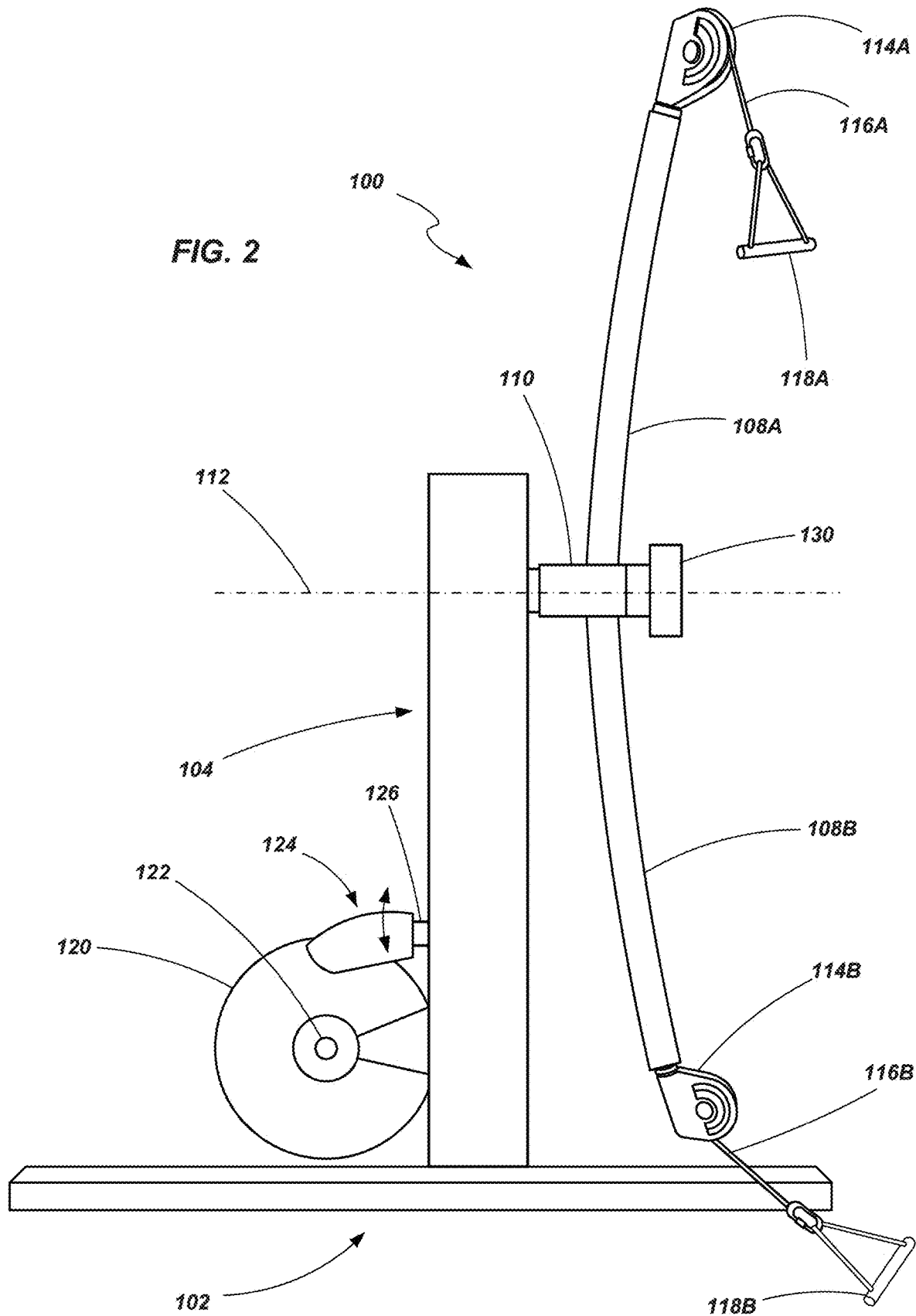


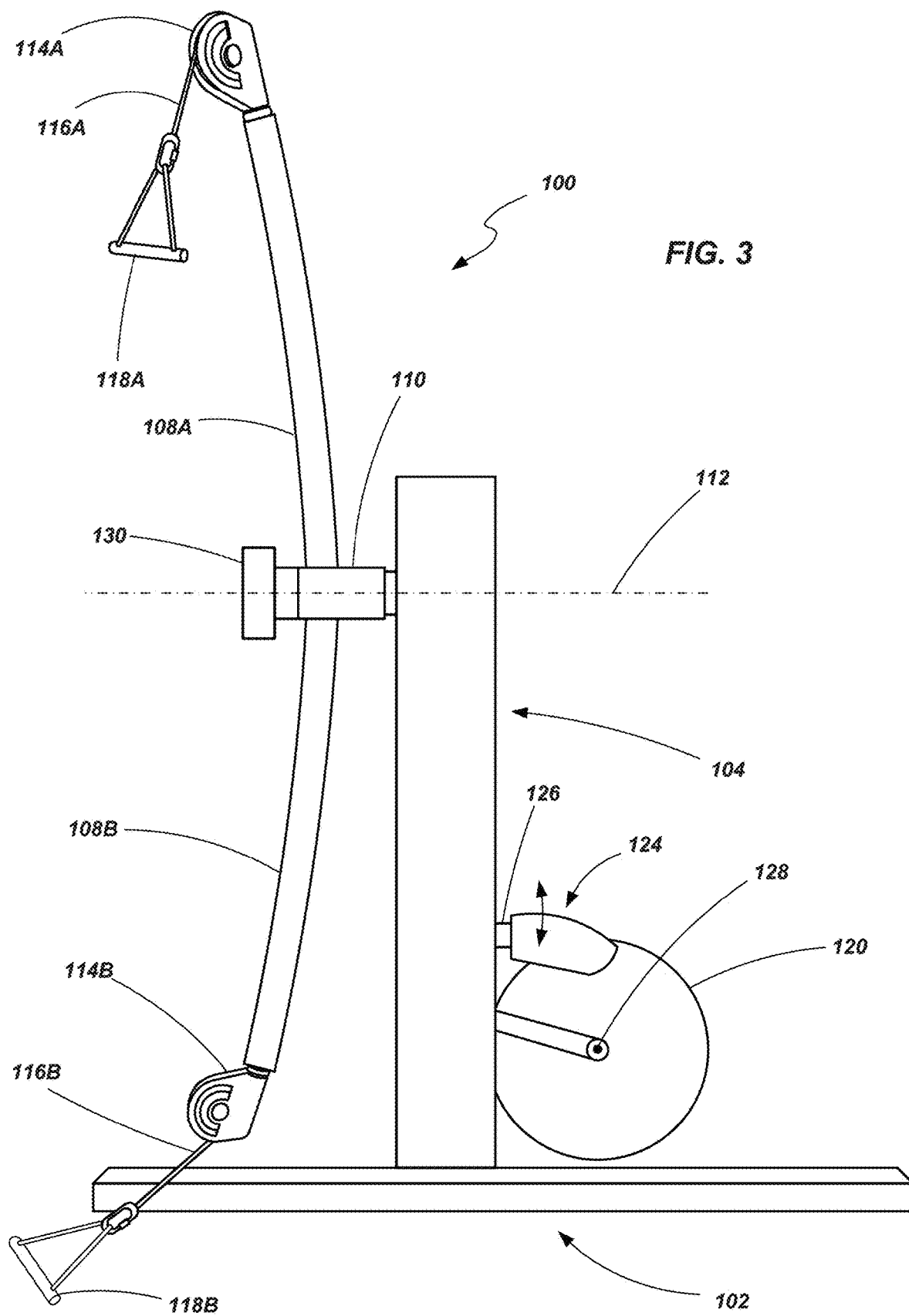
U.S. Patent

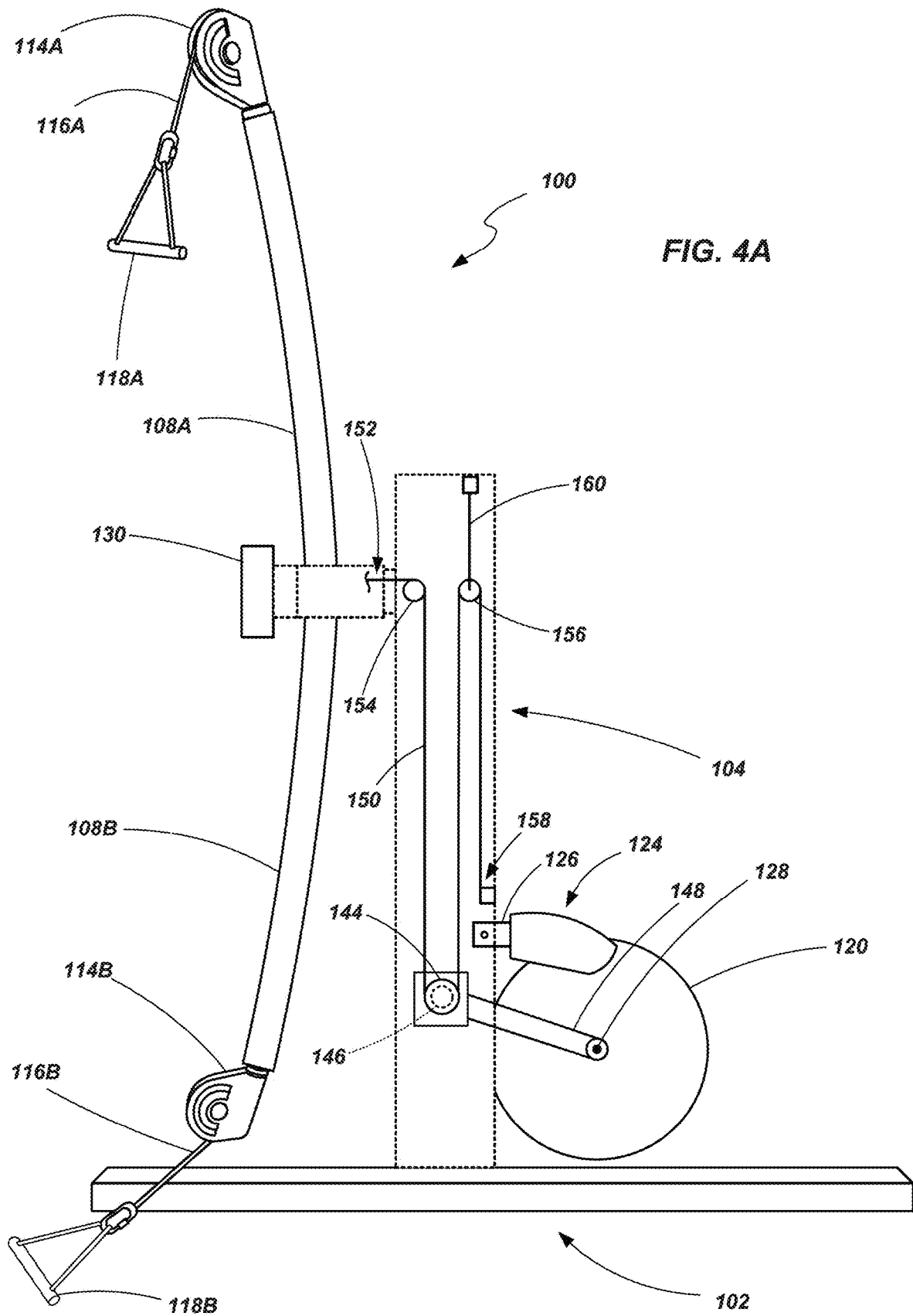
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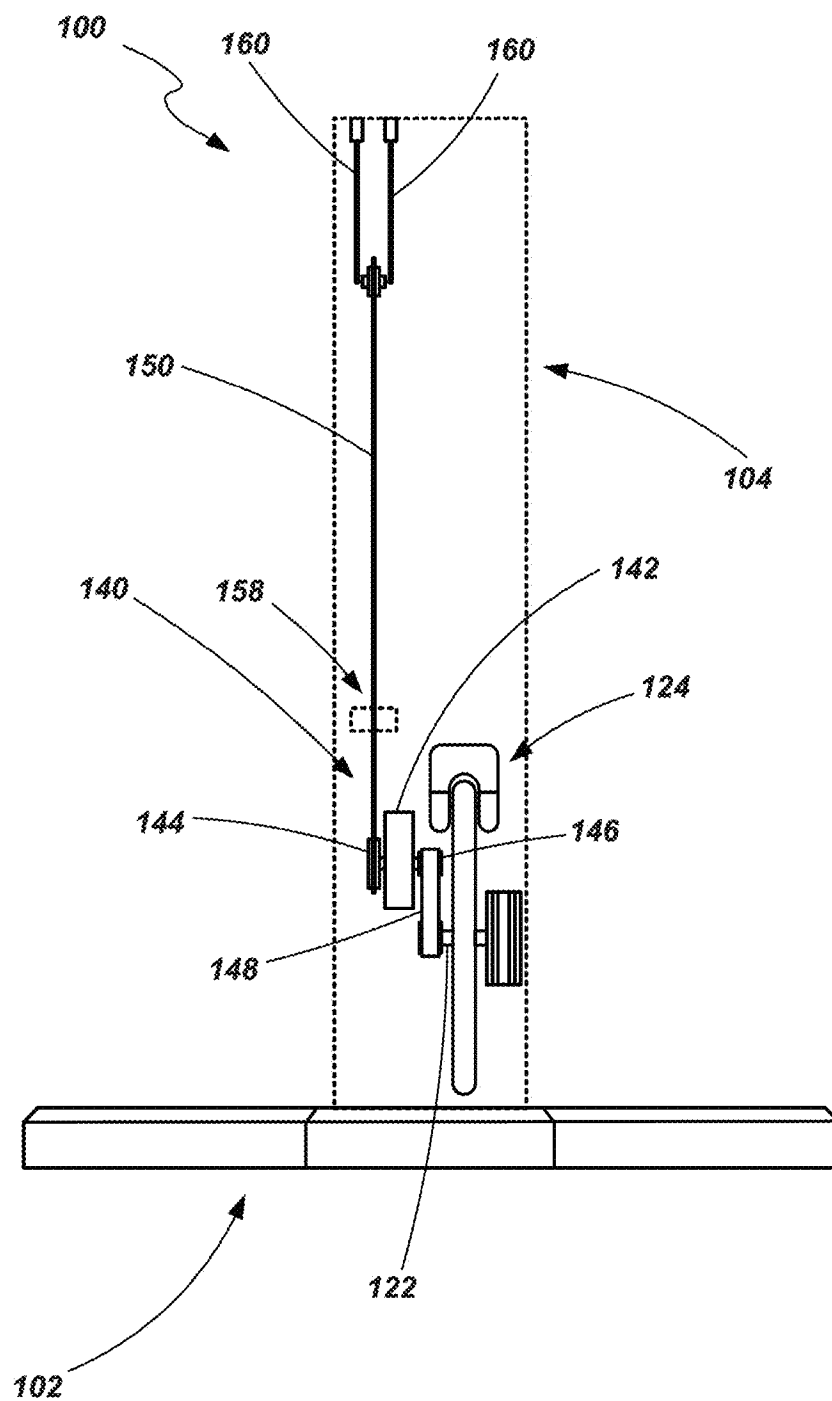
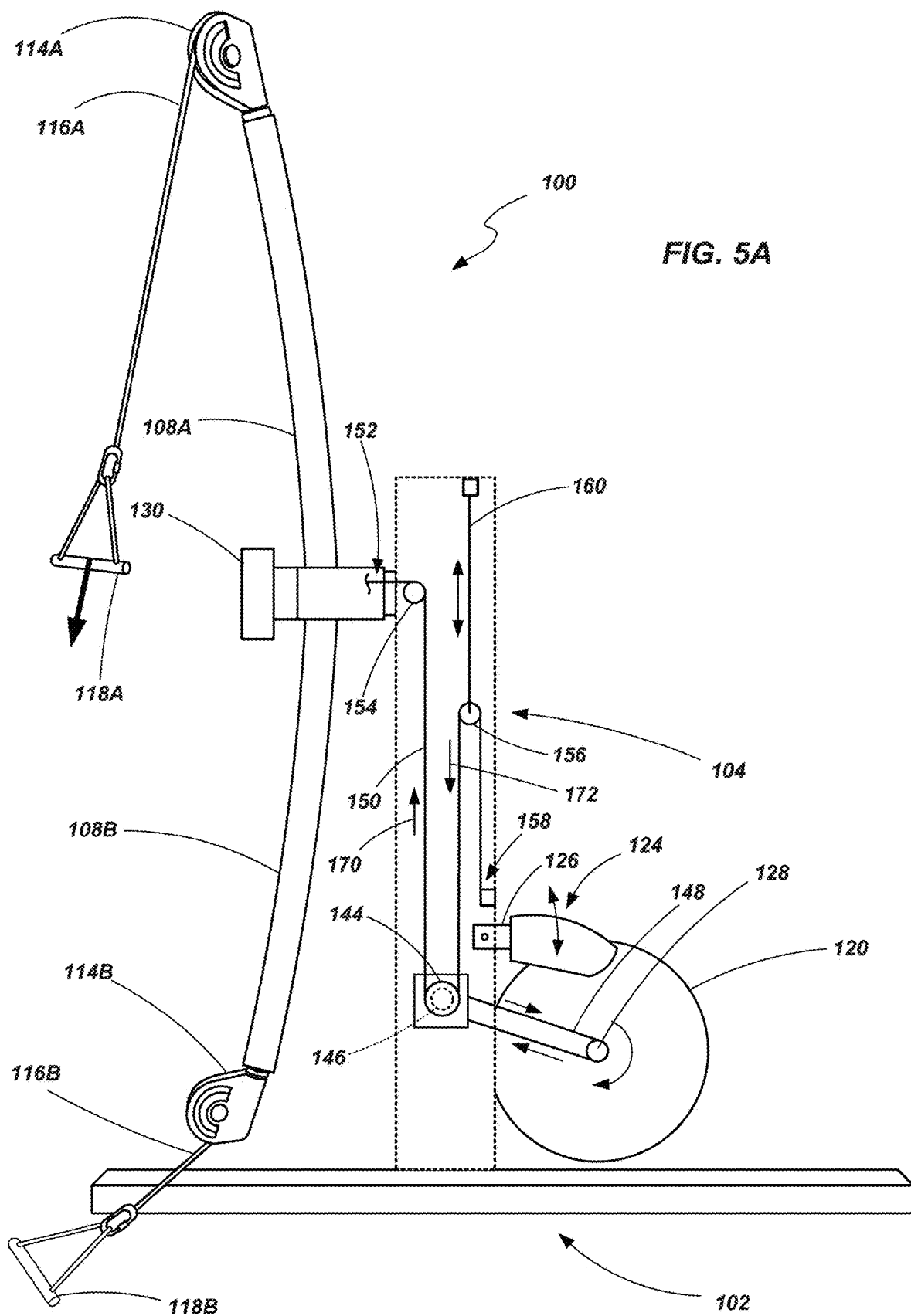


FIG. 4B



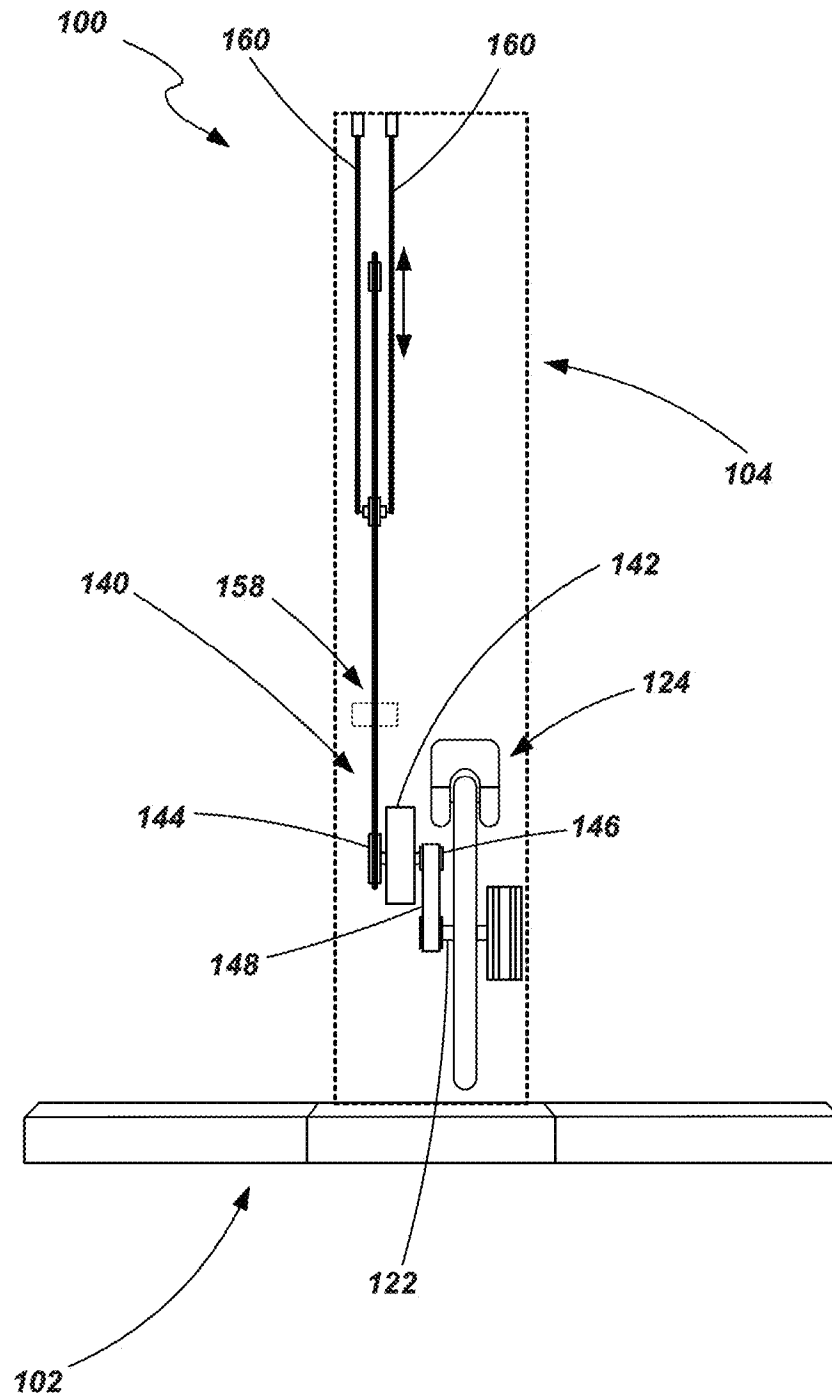


FIG. 5B

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STRENGTH TRAINING APPARATUS**CROSS REFERENCE TO RELATED APPLICATIONS**

This application is a continuation of U.S. application Ser. No. 16/923,275, filed on Jul. 8, 2020, which is a continuation of U.S. application Ser. No. 16/404,413, filed on May 6, 2019, now U.S. Pat. No. 10,709,925, which is a continuation of U.S. application Ser. No. 15/472,954, filed on Mar. 29, 2017, now U.S. Pat. No. 10,279,212, which is a continuation of U.S. application Ser. No. 15/019,088, filed on Feb. 9, 2016, now U.S. Pat. No. 9,616,276, which is a continuation of U.S. application Ser. No. 14/213,793, filed on Mar. 14, 2014, now U.S. Pat. No. 9,254,409, which claims priority to U.S. Provisional Patent Application No. 61/786,007, filed on Mar. 14, 2013. Each of the aforementioned applications is incorporated herein by reference in its entirety.

TECHNICAL FIELD

The present disclosure relates to exercise equipment. More particularly, the present disclosure relates to strength training equipment and to related methods.

BACKGROUND

While there are numerous exercise activities that one may participate in, exercise may be broadly broken into the categories of aerobic exercise and anaerobic exercise. Aerobic exercise generally refers to activities that substantially increase the heart rate and respiration of the exerciser for an extended period of time. This type of exercise is generally directed to enhancing cardiovascular performance. Such exercise usually includes low or moderate resistance to the movement of the individual. For example, aerobic exercise includes activities such as walking, running, jogging, swimming or bicycling for extended distances and extended periods of time.

Anaerobic exercise generally refers to exercise that strengthens skeletal muscles and usually involves the flexing or contraction of targeted muscles through significant exertion during a relatively short period of time and/or through a relatively small number of repetitions. For example, anaerobic exercise includes activities such as weight training, push-ups, sit-ups, pull-ups or a series of short sprints.

When exercising at home or in a gym, aerobic and anaerobic exercise usually involves the use of different types of equipment. For example, aerobic exercise usually involves equipment such as treadmills, ellipticals and bicycles (traditional and stationary) while anaerobic exercise often involves the use of free weights, weight stacks, or other cable and pulley resistance-type systems.

Often, individuals will plan their work-out routines to include both aerobic and anaerobic activities. For example, a person may do anaerobic exercises (e.g., weight lifting and other strength training exercises) on two or three days of the week while doing aerobic exercising (e.g., running, bicycling) on the remaining days of the week. In other instances, an individual may do both aerobic and anaerobic activities during the same day.

One of the difficulties in integrating both aerobic and anaerobic activities is the ability of an individual to efficiently and effectively track their progress. For example, many individuals use aerobic exercise equipment such as a treadmill or an elliptical machine to automatically track the calories that they've burned while using such equipment.

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However, it is more difficult to track or calculate such information when doing strength training exercises.

A couple of examples of equipment that has tried to combine aerobic exercising with anaerobic exercising are described in U.S. Pat. No. 5,527,245 to Dalebout et al. and U.S. Pat. No. 7,740,563 to Dalebout et al. These patents describe a resistance-type strength training apparatus combined with, in one instance, a treadmill, and in another instance an elliptical device.

In view of the foregoing, it would be desirable to provide the ability to track one's progress during exercise in a manner that is applicable to both aerobic and anaerobic activities and which is simple and effective. Additionally, it is a general desire in the industry to provide exercise equipment with new features and enhanced performance.

SUMMARY

In one aspect of the disclosure, a strength training apparatus includes a first arm and a second arm each being configured to be selectively pivoted independent of each other at multiple angles relative to each other, a first pulley coupled to an end of the first arm, a first cable extending through the first arm and the first pulley, a second pulley coupled to an end of the second arm, a second cable extending through the second arm and the second pulley, and an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable. The electronic control panel includes a processor and a memory configured to control a current level of resistance, an electronic input device configured to allow the user to set the current level of resistance, and an electronic output device configured to display the current level of resistance.

In one aspect of the disclosure, a strength training apparatus includes a base member and a tower structure coupled with the base member.

In one or more other aspects that may be combined with any of the aspects herein, may further include at least one arm that is pivotally coupled with the tower structure.

In one or more other aspects that may be combined with any of the aspects herein, may further include a flywheel and a cable and pulley system associated with the at least one arm, wherein displacement of at least one cable of the cable and pulley system affects rotation of the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include a braking mechanism associated with a flywheel and configured to apply a selected resistance to the rotation of the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include a braking mechanism including a magnetic braking mechanism.

In one or more other aspects that may be combined with any of the aspects herein, may further include a torque sensor associated with the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include a console having at least one input device and at least one output device.

In one or more other aspects that may be combined with any of the aspects herein, may further include the console in communication with the braking mechanism, wherein the at least one input device controls the amount of resistance applied to the flywheel by the braking mechanism.

In one or more other aspects that may be combined with any of the aspects herein, may further include the console in communication with the torque sensor, wherein the at least

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one output device provides an indication of the amount of work expended by a user upon rotation of the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include the at least one output device provides the indication of the amount of work expended in units of watts.

In one or more other aspects that may be combined with any of the aspects herein, may further include the strength training apparatus including a drive mechanism associated with the flywheel.

In one or more other aspects that may be combined with any of the aspects herein, may further include a clutch mechanism coupled with the flywheel by way of a drive belt.

In one or more other aspects that may be combined with any of the aspects herein, may further include the clutch mechanism enabling the rotation of the flywheel in a first rotational direction upon the displacement of the at least one cable in a first defined direction, but has no effect on the flywheel upon displacement of the at least one cable in a second defined direction, the second defined direction being the opposite of the first defined direction.

In one or more other aspects that may be combined with any of the aspects herein, may further include the drive mechanism having a drive chain coupled with the cable and pulley system, wherein the drive chain extends about a plurality of sprockets including at least one sprocket that is displaceable relative to the tower.

In one or more other aspects that may be combined with any of the aspects herein, may further include at least one biasing member coupled with the at least one displaceable sprocket.

In one or more other aspects that may be combined with any of the aspects herein, may further include an embodiment where the at least one arm includes a pair of arms, wherein the cable and pulley system includes a first pulley coupled with a first arm of the pair of arms with a first cable extending through the first pulley and a second pulley coupled with the second arm with a second cable extending through the second pulley.

In one or more other aspects that may be combined with any of the aspects herein, may further include the pair of arms maintained in a fixed angular position relative to each other.

In another aspect of the disclosure, a method of conducting strength training includes applying a force to a cable and displacing the cable in a first direction and affecting rotation of a flywheel upon displacement of the cable.

In one or more other aspects that may be combined with any of the aspects herein, may further include a resistance applied to the flywheel and the torque applied to the flywheel being measured, such as by way of a sensor.

In one or more other aspects that may be combined with any of the aspects herein, may further include calculating the work performed, in watts, based at least in part on the measured torque.

In one or more other aspects that may be combined with any of the aspects herein, may further include applying resistance to the flywheel by applying resistance using a magnetic brake.

In one or more other aspects that may be combined with any of the aspects herein, may further include the resistance applied by the magnetic brake being selectively varied.

In one or more other aspects that may be combined with any of the aspects herein, may further include applying a force to a cable including pulling the cable through a pulley, and selectively positioning the pulley at one of a variety of positions prior to pulling the cable through the pulley.

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In one or more other aspects that may be combined with any of the aspects herein, may further include a method of tracking work expended during exercising including conducting an aerobic exercise activity and determining the work expended during the aerobic exercise activity and expressing the work expended in units of watts.

In one or more other aspects that may be combined with any of the aspects herein, may further include an embodiment where an anaerobic exercise activity is conducted and the work expended during the anaerobic exercise activity is determined and expressed in units of watts.

In one or more other aspects that may be combined with any of the aspects herein, may further include summing the amount of work expended during the aerobic activity and the amount of work expended during the anaerobic activity.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate various embodiments of the present methods and systems and are a part of the specification. The illustrated embodiments are merely examples of the present systems and methods and do not limit the scope thereof.

FIG. 1 is a perspective view of a strength training apparatus;

FIG. 2 is a first side view of the strength training apparatus shown in FIG. 1;

FIG. 3 is another side view of the strength training apparatus shown in FIG. 1;

FIGS. 4A and 4B show a side view and a rear view, respectively, of the apparatus shown in FIG. 1, including various components, when the apparatus is in a first state; and

FIGS. 5A and 5B show a side view and a rear view, respectively, of the apparatus shown in FIG. 1, including various components, when the apparatus is in a second state.

Throughout the drawings, identical reference numbers designate similar, but not necessarily identical, elements.

DETAILED DESCRIPTION

Referring to FIGS. 1-3, a strength training apparatus 100 is provided. The apparatus 100, according to certain embodiments, includes a base member 102 and a tower 104 or support structure coupled to, and extending upward from, the base member 102. The base may be configured to include a plurality of legs 106A-106C extending away from each other to provide a stable base or platform for the apparatus 100 and to support the apparatus 100 when forces are applied to it by someone using the apparatus 100 to exercise. In the embodiment shown in FIGS. 1-3, the base member 102 includes three legs. However, it is noted that other configurations are contemplated.

A pair of arms 108A and 108B are pivotally coupled to the tower 104 by way of a bearing 110 or other mechanical structure. The bearing 110 enables the arms 108A and 108B to rotate about a defined axis 112 (FIGS. 2 and 3) relative to the tower 104 and base member 102 as indicated by directional arrow 113 (FIG. 1). In one embodiment, the arms 108A and 108B may be configured to maintain a constant angular relationship relative to each other as they are rotated about the axis 112 (e.g., they may continually extend in substantially opposite directions from each other). In another embodiment, each arm 108A and 108B may be selectively positionable (manually, or by a motor or other

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actuator (not shown)) independent of the other so that they may be positioned at any of a variety of angles relative to each other.

The apparatus **100** also includes a pair of pulleys **114A** and **114B**, one being pivotally coupled to the end of each arm **108A** and **108B**. Cables **116A** and **116B** extend through each pulley **114A** and **114B** and are coupled with handles **118A** and **118B**. As will be described in further detail below, the handles **118A** and **118B**, the cables **116A** and **116B** and the pulleys **114A** and **114B** are part of a cable/pulley system that provides resistance to an individual that is using the apparatus **100** for strength training.

As seen in FIGS. 2 and 3, a flywheel **120** is coupled to either the base member **102** or the tower **104** (or to both) and configured to rotate about a shaft **122**. A resistance or braking mechanism **124** is positioned adjacent the flywheel **120** and is selectively adjustable so as to apply a desired level of resistance to the rotation of the flywheel **120**. Various types of braking mechanisms may be used including, in one embodiment, straps or pads that apply friction to the flywheel **120**. In one embodiment, a magnetic brake (sometimes referred to as an eddy current brake) may be used to provide an adjustable level of resistance applied to the flywheel **120**.

When the braking mechanism **124** is configured as a magnetic mechanism it may include an arm **126** that is pivotally coupled with the tower **104** and which contains a plurality of magnets arranged to provide a desired magnetic flux. As the arm **126** is rotated relative to tower **104** (and, thus, the flywheel **120**), the magnetic flux through which the flywheel **120** rotates changes, thereby altering the amount of rotational resistance experienced by the flywheel **120**.

The flywheel **120**, when configured to interact with a magnetic braking mechanism, may include ferrous components, non-ferrous components, or both. In one embodiment, the flywheel **120** may include a relatively dense ferrous component to impart a desired level of rotational inertia to the flywheel **120**. The flywheel **120** may also include a nonferrous component to provide increased braking resistance when used with a magnetic brake mechanism. For example, one embodiment may include a portion that is formed of cast iron (a ferrous material) to provide the desired rotational inertia with another portion formed of an aluminum material (to provide increased braking response to the magnetic mechanism). One such configuration of a flywheel, as well as an associated magnetic braking mechanism, is described by U.S. Patent Application Publication No. 2012/0088638 to Lull (application Ser. No. 13/267,719), the disclosure of which is incorporated by reference herein in its entirety.

A torque sensor **128** may be associated with the shaft **122** to determine the amount of torque applied to the flywheel **120** by a drive mechanism (discussed below). Various types of torque sensors may be utilized. One example of a torque sensor includes that which is described in U.S. Pat. No. 7,011,326 to Schroeder et al., the disclosure of which is incorporated by reference herein in its entirety. Another example of a torque sensor includes that which is described in U.S. Pat. No. 7,584,673 to Shimizu, the disclosure of which is incorporated by reference herein in its entirety.

The apparatus further includes a control panel **130** which may be located adjacent the bearing **110** or some other convenient location (e.g., on the tower **104**). The control panel **130** may include various input devices **132** (e.g., buttons, switches or dials) and output devices **134** (e.g., LED lights, displays, alarms) to provide means of interaction with a user of the apparatus **100**. The control panel **130** may

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further include connections for communication with other devices. The controller may include a processor and memory to provide various functions in controlling components of the apparatus **100** (e.g., the braking mechanism), in communicating with various components (e.g., the torque sensor) and making certain calculations as will be discussed below.

In one example, one of the input devices **132** of the control panel **130** may be used to set a desired resistance level that is to be applied to the flywheel **120** by controlling an actuating member associated with the braking mechanism **124**. An output device **134** (e.g., a display) may indicate the current or selected level of resistance. An output device **134** of the control panel **130** may also provide an indication of the amount of work performed within a period of time calculated, for example, based on the torque applied to the flywheel **120** as measured by the torque sensor **128**.

Referring now to FIGS. 4A and 4B, a side view and a rear view of the apparatus **100** is shown with various components which may be disposed within the tower **104** or otherwise arranged to assist in driving flywheel **120**. It is noted that FIG. 4B does not depict the arms **108A** and **108B** (and associated components) for purposes of clarity and convenience. A drive mechanism **140** may include a clutch mechanism **142** having an input shaft **144** and an output shaft **146**. A drive belt **148** (or drive chain or other similar drive structure) may extend about the output shaft **146** and also about the shaft **122** of the flywheel **120** (or associated pulleys coupled with the shafts). The clutch mechanism **142** is configured such that, when the input shaft **144** is rotated in a first specified direction, the output shaft **146** is likewise rotated in a specified direction displacing the drive belt **148** and, ultimately, driving the flywheel **120** in a desired direction. However, if the input shaft **144** is rotated in a second direction, opposite that of the first direction, it has no effect on the output shaft **146**. Rather, the output shaft **146** is enabled to continue rotating in its initially specified direction and does not reverse directions. It is noted that, in other embodiments, the clutch mechanism **142** may be coupled directly to the flywheel **120**.

A drive chain **150** (or drive belt or cable or other appropriate structure) has a first end **152** that is coupled to the cables **116A** and **116B** that extend through pulleys **114A** and **114B** and either extend through, or adjacent to, the arms **108A** and **108B**. The drive chain **150** extends through several pulleys or sprockets including, for example, a first sprocket **154**, the input shaft **144** (or an associated pulley or sprocket coupled therewith) and a second sprocket **156**. A second end **158** of the drive chain **150** may be fixed, for example, to a frame or other component associated with the tower **104**. In the embodiment shown in FIGS. 4A and 4B, the first sprocket **154** is rotatable about an axis which is fixed relative to the tower **104**. The second sprocket **156** is rotatable about an axis which is displaceable relative to the tower **104**. For example, one or more biasing members **160** may be coupled between the second sprocket **156** and the tower **104** (or some component thereof) enabling the second sprocket **156** to be displaced relative to the tower **104**. Guide members may be used to help constrain or control the displacement of the sprocket along a desired path.

Referring briefly to FIGS. 5A and 5B, views similar to those depicted in FIGS. 4A and 4B, respectively, show certain components in a second position or state. Specifically, FIG. 5A depicts the displacement of a handle **118A** due to application of a force by an individual during exercise. Displacement of the handle **118A** results in displacement of the associated cable **116A** and, ultimately, displacement of

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the drive chain 150. As indicated in FIG. 5A, a first portion of the drive chain 150 is displaced upwards towards the first sprocket 154 as indicated by directional arrow 170 while a second portion of the drive chain 150 is displaced downwards away from the second sprocket 156 and towards the input shaft 144 as indicated by directional arrow 172. It is noted that this displacement of the drive chain 150 also includes the downward displacement of the second sprocket 156 against the force of the biasing members 160 as seen in both FIGS. 5A and 5B. The displacement of the drive chain 150 results in the rotation of the input shaft 144, actuating the drive mechanism 140 such that the drive belt 148 drives the flywheel 120.

Upon release of the force applied to the handle 118A, the biasing members 160 pull the second sprocket 156 back to its previous position bringing the various components (e.g., drive chain 150, cable 116A and handle 118A) back to the positions shown in FIGS. 4A and 4B. However, as noted above, the return of the drive chain 150 to its previous position does not cause the flywheel 120 to rotate in the opposite direction or otherwise hinder its continued rotation due to the directional preference of the clutch mechanism 142. It is noted that, while the example shown in FIGS. 5A and 5B is described in terms of one particular handle (i.e., 118A) being displaced, the same functionality applies to the displacement to the other handle (i.e., 118B) or to both of them being substantially simultaneously displaced.

INDUSTRIAL APPLICABILITY

During exercise, many individuals desire to focus on anaerobic strength training, or to integrate anaerobic strength training with aerobic work-outs. One of the difficulties in mixing both aerobic and anaerobic activities is the ability of an individual to efficiently and effectively track their progress. For example, many individuals use aerobic exercise equipment such as a treadmill, an elliptical machine or a pedometer to help track the calories that they've burned while using such equipment. However, it is more difficult to track or calculate such information when doing strength training types of exercises.

The exercise apparatus provided herein provides a strength training apparatus that enables a variety of exercises while also providing the ability to track the work performed by an individual during their exercise session. By positioning the adjustable arms at different locations relative to the tower, different types of exercises may be conducted. For example, due to the adjustability of the arms/pulleys, the exercise apparatus may be used to perform exercises including, but not limited to, standing abdominal crunches, curls and other bicep exercises, lat pull-downs, chest presses, incline and decline presses, overhead presses, triceps extensions, shoulder extensions, leg extensions, leg curls, abduction and adduction exercises, and a variety of other exercises, including variations of the examples provided.

Additionally, the use of a flywheel in connection with a strength training apparatus provides a different form of resistance than in conventional strength training exercises, one that can be measured, tracked and incorporated into a planned exercise routine. The flywheel, combined with a braking mechanism such as a magnetic brake, enables considerable flexibility in setting the desired resistance during exercise. In many conventional strength training exercises, the amount of resistance provided (e.g., by free weights, weight stacks or resistance bands) is only adjustable in set increments (e.g., 5 or 10 pound increments). The use of a flywheel with a variable resistance braking mechanism

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enables fine tuning of the resistance over a continuous spectrum between two defined limits.

The use of a torque sensor in conjunction with the flywheel enables the calculation of work, power or energy so that, for example, a user of the apparatus may determine their performance level while using the exercise apparatus. In one particular example, the power expended during an exercise session may be expressed in watts (i.e., joules/sec (J/s) or newton meters 1 sec (N*m/s). A user of the machine can review the power expended during an exercise session from a display (or other output device) associated with the exercise apparatus and then compare their performance to a goal or a benchmark.

Such a way of tracking the effort expended during an anaerobic exercise routine provides more insight into the progress of the individual than just the number of repetitions completed during a given work-out session. If desired, other units may be utilized to track the energy expended by an individual during a work-out session. For example, rather than expressing the work-out performance in terms of watts (units of power), it could be expressed in terms of joules (units of work).

This information could be used with information from other work-out activities, including aerobic exercise, to consistently monitor the performance of an individual over a desired period of time. For example, rather than expressing the performance of an individual on a treadmill or an elliptical machine in terms of calories, those performances may similarly be provided in terms of watts (or another selected unit) so that all types of exercise activity may be monitored uniformly. An individual may then customize their exercise routine based, for example, on the amount of work that is to be performed regardless of whether that work occurs during an aerobic or an anaerobic activity.

One example of customizing a work-out that may be utilized in conjunction with the exercise apparatus described herein is set forth in U.S. patent application Ser. No. 13/754,361, filed on Jan. 30, 2013, which published on Aug. 1, 2013 as U.S. Patent Application Publication No. 2013/0196821 A1 ("the '821 Publication"), the disclosure of which is incorporated by reference herein in its entirety. One particular example of tracking a work-out across various exercise equipment and which may be utilized in conjunction with the exercise apparatus described herein is set forth in U.S. Pat. No. 6,746,371 to Brown et al., the disclosure of which is incorporated by reference herein in its entirety.

For example, FIG. 1 of the '821 Publication illustrates a block diagram of one embodiment of an environment 100 in which the present systems and methods may be implemented. In one configuration, an exercise apparatus 102 may exchange information with a client computing device 106. The client computing device 106 may acquire the information from the apparatus 102. For example, the information may be embedded as a data exchanging module 104 that is included on or by the exercise apparatus 102. Examples of the data exchanging module 104 may include, but are not limited to, barcodes, QR codes, RF tags, etc. The module 104 may be affixed or attached to an area of the apparatus 102 or an area that is not on the apparatus 102 (e.g., a wall close to the apparatus 102). The client computing device 106 may include a data sensing module 108 that is able to sense the data exchanging module 104. For example, the sensing module 108 may provide scanning capabilities that allows the device 106 to scan the data exchanging module 104 to obtain information about the apparatus 102. For example, the data exchanging module 104 may be a barcode and the data sensing module 108 may be a barcode scanner. In

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another embodiment, the data exchanging module 104 and the data sensing module 108 may include near field communication (NFC) capabilities. As a result, using NFC standards, a radio communication link may be established between the apparatus 102 and the device 106. The client computing device 106 may acquire the information from the exercise apparatus 102 via the radio communication link. The apparatus 102 and the device 106 may exchange information via other methods in addition to bar codes, QR codes, and NFC technologies.

Examples of the exercise apparatus 102 may include a weight machine (e.g., a fly machine, a leg press machine, a leg curl machine, a leg extension machine, a cable lateral pull-down machine, a triceps pull-down machine, a row machine, etc.). The exercise apparatus 102 may also be a free weight, such as a dumbbell, a medicine ball, an exercise ball, a bench press, etc. In another embodiment, the exercise apparatus 102 may be a cardio machine (e.g., a treadmill, a stationary bike, a spinner bike, a stair machine, etc.).

In one embodiment, the client computing device 106 may be a smartphone, a laptop, a tablet, or any other portable computing device. In one configuration, the client computing device 106 may be any device that is able to detect, receive, and interpret the data acquired from the data exchanging module 104. To interpret the received data, the client computing device 106 may communicate with a server 112 across a network 110 connection. The network 110 connection may be a Wi-Fi, a wireless local area network (WLAN), a cellular network, and the like. The server 112 may communicate with an exercise apparatus database 114. The database 114 may be external to the server 112, or the database 114 may be built into the server 112. In one embodiment, the exercise apparatus database 114 may store information regarding the exercise apparatus 102. For example, the database 114 may store instructions that indicate how to properly use the exercise apparatus 102. The database 114 may also store videos that demonstrate how to use the apparatus 102. In one example, the client computing device 106 may acquire information from the apparatus, such as an identifier that identifies the apparatus 102. The identifier may be communicated to the server 112. The server 112 may use the identifier to locate additional information in the database 114 about the apparatus 102. The server may communicate the additional information about the apparatus 102 to the computing device 106. In one embodiment, the data exchanging module 104 may include the additional information that is stored in the database 114. As a result, when the computing device 106 acquires the information from the apparatus 102, there may be no need for the client 106 to communicate with the server 112 to acquire the additional information.

FIG. 2 of the '821 Publication is a block diagram illustrating one embodiment of a client computing device 106-a. The client computing device 106-a may be an example of the client computing device 106 illustrated in FIG. 1 of the '821 Publication. In one example, the client computing device 106-a may include a data sensing module 108-a. In one configuration, the module 108-a may include a QR code module 202, a barcode reading module 204, an NFC module 206, a profile module 208, a customized workout module 210, and a tracking module 212. Details regarding each of these modules will be described below.

In one embodiment, the QR code module 202 may sense data affixed to or by the exercise apparatus 102 that is encoded as a QR code. Similarly, the barcode reading module 204 may sense data embedded or encoded as a barcode that may be attached to or near the exercise appa-

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ratus 102. The modules 202 and 204 may sense the data by scanning the QR code or the barcode that is attached to the exercise apparatus 102. The NFC module 206 may establish a radio communication link with the exercise apparatus 102. The NFC module 206 may acquire data from the exercise apparatus 102 via the radio communication link.

In one configuration, the profile module 208 may receive and store input from a user relating to the user's profile information. Examples of profile information may include the user's age, height, weight, etc. The profile module 208 may further receive and store input from the user relating to physical fitness goals of the user. Examples of physical fitness goals may include a desired weight loss, strength conditioning goals, target heart rate goals, running/walking distance goals, specific muscle definition goals etc. The customized workout module 210 may receive the data sensed from the modules, 202, 204, and/or 206. The workout module 210 may also receive information stored by the profile module 208. In one embodiment, the workout module 210 may generate a customized workout routine for the user to perform with the exercise apparatus 102 in order to progress towards achieving the physical fitness goals stored in the profile module.

As an example, the client computing device 106-a may receive data relating to the exercise apparatus 102. The data may indicate the name of the apparatus 102, the functions of the exercise apparatus 102, instructions on how to properly use the exercise apparatus 102, the muscle group focused on by the exercise apparatus 102, the health benefits of using the apparatus 102, video or other multimedia data that demonstrate how to use the apparatus 102, etc. The data may be received directly from the data exchange module 104 affixed to the apparatus 102 and/or from the server 112 that obtains the data from the database 114 and communicates the data to the client computing device 106. The customized workout module 210 may analyze the received data about the exercise apparatus 102 together with the information stored by the profile module 208. Based on this analysis, the customized workout module 210 may generate a workout routine for the user to perform with the exercise apparatus 102. The generated workout routine may be focused on helping the user accomplish one or more physical fitness goals stored by the profile module 208. For example, the user may specify a physical fitness goal of bench pressing 200 lbs. The profile module 208 may also include information that indicates that the user is currently able to bench 160 lbs. The user may then approach a chest fly machine with the client computing device 106-a. A barcode may be affixed on a portion of the machine. The computing device 106-a may scan the barcode and obtain data about the machine. As stated above, the data may be acquired from the scan of the barcode and/or from the server 112. For example, the client 106-a may scan the barcode and retrieve the identity of the machine (in this example, a chest fly machine). The identity may be transmitted to the server 112. The server 112 may use the received identity to search the database 114 for data about the machine. The server 112 may then communicate the data back to the client computing device 106-a.

The data (either obtained directly from the exercise apparatus 102 and/or from the server 112) may indicate that the chest fly machine focuses on certain chest muscles. The data may also include a video demonstration that illustrates how to properly use the chest fly machine. The customized workout module 210 may generate a workout routine (e.g., number of repetitions, sets, and the weight resistance) for the user to follow when using the chest fly machine. The routine may be generated based on an analysis of the information

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stored by the profile module 208 as well as the data acquired from the exercise apparatus (directly and/or indirectly from the server 112). The workout routine may be customized for the user to assist the user to accomplish the physical fitness goal(s) included in the profile module. As a result, the workout routine, if followed by the user, may assist the user to accomplish the goal of bench pressing 200 lbs.

In one example, the profile module 208 may not include physical fitness goal information that relates to a certain exercise apparatus 102. For instance, the sensing module 108-a may acquire information relating to a treadmill by scanning a barcode, QR code, etc. The customized workout module 210 may analyze the profile module 208 and discover that the user has not entered a goal that may be accomplished by using the treadmill. In one configuration, the customized module 210 may query the user as to whether the user would like to enter a physical fitness goal that may be achieved by using the treadmill. For example, the module 210 may display the following query "Do you want to set a goal to run 3 miles in 30 minutes?" If the user selects this goal, the workout module 210 may continue to generate a customized workout routine for the user to assist the user to complete this goal. Instead of selecting a goal generated by the customized workout module 210, the user may provide his/her own goal as it relates to the treadmill. Once the goal is provided, the module 210 may generate a customized workout routine.

The tracking module 212 may track the progress of the user while the user is using the exercise apparatus 102. For example, the tracking module 212 may be a camera or other tracking device that is capable of monitoring the movement of the user. The tracking module 212 may also track the progress of the user towards completing the goals specified in the profile module 208. For example, the profile module 208 may include a goal to lose 20 lbs. The tracking module 212 may track the weight of the user to allow the user to see his/her progress towards achieving the goal of losing 20 pounds. In one example, the user may manually enter his/her weight into the tracking module 212. In another embodiment, the tracking module 212 may track the progress of the user by receiving automatic updates via email, SMS messages, and the like that include the current state of the user. For example, the user may visit a website and record his/her weight on the website. The website may communicate with the tracking module 212 to provide the updated weight of the user.

FIG. 3 of the '821 Publication is a block diagram illustrating one embodiment of a profile module 208-a. The profile module 208-a may be an example of the profile module 208 illustrated in FIG. 2 of the '821 Publication. In one configuration, the profile module 208-a may include a personal information module 302 and a goal information module 304.

In one embodiment, the personal information module 302 may include personal information about the user, such as, but not limited to, the user's age, height, weight, resting heart rate, and any other biometric information. The goal information module 304 may include physical fitness goals provided by the user. For example, the goal information module 304 may store a weight loss goal, a strength conditioning goal, a cardio goal, and the like. In one example, the user may manually input information to the modules 302, 304 via interfaces provided by the client computing device 106. In another embodiment, the user may provide the information to the modules 302, 304 remotely by interfacing with a website and inputting the information. The

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information may then be transmitted from the website to the client computing device 106 and stored as part of the modules 302, 304.

FIG. 4 of the '821 Publication is a block diagram illustrating one embodiment of a customized workout module 210-a. The module 210-a may be an example of the customized workout module 210 of FIG. 2 of the '821 Publication. In one embodiment, the module 210-a may include a profile analysis module 402, an exercise apparatus analysis module 404, a workout generation module 406, and a demonstration generation module 408.

In one configuration, the profile analysis module 402 may analyze information provided by the profile module 208. The information provided by the profile module 208 may include the physical fitness goals entered by the user. The workout generation module 404 may generate a customized workout routine for the user with relation to the exercise apparatus 102. For example, the exercise apparatus 102 may be a dumbbell. The profile analysis module 402 may determine that the user has set a goal to be able to do 10 repetitions of a bicep curl using a 50 pound dumbbell. The profile analysis module 402 may further determine from the information provided by the profile module 208 that the user has previously performed curls using 25 lb dumbbells. The exercise apparatus analysis module 404 may analyze data about the apparatus. The data may be received by scanning a barcode, QR code, etc. that may be affixed to the apparatus. The profile analysis module 402 may determine from the specific muscles focused on by the exercise apparatus.

The workout generation module 406 may generate a schedule of workouts for dumbbells of various weights that will gradually build up the user's bicep muscles to eventually reach the user's goal of performing 10 repetitions of a bicep curl using a 50 lb dumbbell. For example, the generation module 406 may suggest the user begin by performing 3 sets of 10 repetitions using 25 lb dumbbells. The generated workout may instruct the user to perform this workout four times a week. The generation module 406 may generate a workout that specifies that each week the weight of the dumbbell should be increased by 5 lbs. As a result, based on the goals provided by the user, the generation module 404 may generate a customized workout for a particular exercise apparatus 102 to assist the user to achieve his/her goals.

The demonstration generation module 408 may generate and/or provide a demonstration of how to use the exercise apparatus 102. For example, the generation module 408 may generate and/or provide a video that the user may view on the client computing device 106 to learn how to properly use the exercise apparatus 102. The demonstration generation module 408 may also generate and/or provide a text document that the user may read that includes instructions on how to use the exercise apparatus 102.

FIG. 5 of the '821 Publication is a block diagram illustrating one embodiment of an exercise apparatus 102-a and a tracking module 212-a. In one example, the exercise apparatus 102-a may be an example of the exercise apparatus 102 illustrated in FIG. 1 of the '821 Publication. The tracking module 212-a may be an example of the tracking module 212 illustrated in FIG. 2 of the '821 Publication.

In one embodiment, the exercise apparatus 102-a may include a monitoring apparatus 502-a-1. The monitoring apparatus 502-a-1 may monitor the user while the user is using the exercising apparatus 102-a. For example, the monitoring apparatus 502-a-1 may be a camera installed or connected to the exercise apparatus 102-a. The apparatus 502-a-1 may also be a magnetic strip attached to the exercise

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apparatus 102-a that detects movement of the apparatus 102 (e.g., a dumbbell). The monitoring apparatus 502-a-1 may record the actions of the user while the user is performing exercises using the exercising apparatus 102-a. The recorded actions may be transmitted to the tracking module 212-a.

The tracking module 212-a may also include a monitoring apparatus 502-a-2 to record the actions of the user while the user is engaged with a particular exercise apparatus. The apparatus 502-a-2 may be a camera, or other tracking device to record the activity of the user. The tracking module 212-a may further include a workout history module 504 and a goal monitoring module 506. The workout history module 504 may store information regarding past workouts performed by the user. For example, the monitoring apparatuses 502-a-1 and/or 502-a-2 may monitor a user running on a treadmill for 30 minutes. At the conclusion of the 30 minutes, the monitoring apparatus 502 may communicate the information to the workout history module 504. If the user is using a weight machine, the monitoring apparatus 502 may detect the number of repetitions as well as the weight used during the repetitions. As a result, the workout history module 504 may include a log that documents the past workout activity of the user with various exercise machines.

In one embodiment, the goal monitoring module 506 may monitor the goals specified by the user. The module 506 may track the progress of the user with respect to achieving the goals. For example, the goal monitoring module 506 may communicate with the workout history module 504 to determine whether the user has satisfied a particular goal. The monitoring module 506 may generate a transmit goal update message to the user (e.g., via email, SMS text, etc.) that indicate to the user the user's progress in completing a goal. The module 506 may also send a goal completed message to the user when it is determined that a physical fitness goal has been accomplished.

FIG. 9 of the '821 Publication depicts a block diagram of a computer system 910 suitable for implementing the present systems and methods. The computer system 910 may be an example of the client computing device 106 of FIG. 1 of the '821 Publication. Computer system 910 includes a bus 912 which interconnects major subsystems of computer system 910, such as a central processor 914, a system memory 917 (typically RAM, but which may also include ROM, flash RAM, or the like), an input/output controller 918, an external audio device, such as a speaker system 920 via an audio output interface 922, an external device, such as a display screen 924 via display adapter 926, serial ports 928 and 930, a keyboard 932 (interfaced with a keyboard controller 933), multiple USB devices 992 (interfaced with a USB controller 991), a storage interface 934, a floppy disk unit 937 operative to receive a floppy disk 938, a host bus adapter (HBA) interface card 935A operative to connect with a Fibre Channel network 990, a host bus adapter (HBA) interface card 935B operative to connect to a SCSI bus 939, and an optical disk drive 940 operative to receive an optical disk 942. Also included are a mouse 946 (or other point-and-click device, coupled to bus 912 via serial port 928), a modem 947 (coupled to bus 912 via serial port 930), and a network interface 948 (coupled directly to bus 912).

Bus 912 allows data communication between central processor 914 and system memory 917, which may include read-only memory (ROM) or flash memory (neither shown), and random access memory (RAM) (not shown), as previously noted. The RAM is generally the main memory into which the operating system and application programs are loaded. The ROM or flash memory can contain, among other

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code, the Basic Input-Output system (BIOS) which controls basic hardware operation such as the interaction with peripheral components or devices. For example, the data sensing module 108-b to implement the present systems and methods may be stored within the system memory 917. Applications resident with computer system 910 are generally stored on and accessed via a non-transitory computer readable medium, such as a hard disk drive (e.g., fixed disk 944), an optical drive (e.g., optical drive 940), a floppy disk unit 937, or other storage medium. Additionally, applications can be in the form of electronic signals modulated in accordance with the application and data communication technology when accessed via network modem 947 or interface 948.

In one configuration, when the portable device retrieves information about an exercise machine, the portable device may also access physical fitness goals for the user. The user may have previously entered the goals or, upon retrieving information about an exercise machine, the portable device may query the user to select or enter physical fitness goals. Upon accessing the goals, the information about the exercise machine may be analyzed to determine whether the exercise machine may assist the user to accomplish one or more of the goals. If the machine cannot help the user accomplish the provided goals, the user may be queried as to whether he/she would like to select (or provide) a goal that this particular exercise machine may help the user accomplish. If the machine is able to assist the user in completing a goal, a customized workout routine may be generated and displayed to the user. The workout routine may provide instructions to the user relating to the number of repetitions, sets, the amount of weight, the amount of time, speed, incline, resistance, etc., that the user should perform to accomplish a goal using the exercise machine.

The invention claimed is:

1. A strength training apparatus comprising:

a first arm and a second arm each being configured to be selectively pivoted independent of each other at multiple angles relative to each other;

a first pulley coupled to an end of the first arm;

a first cable extending through the first arm and the first pulley;

a second pulley coupled to an end of the second arm;

a second cable extending through the second arm and the second pulley; and

an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic control panel including:

a processor and a memory configured to control a current level of resistance,

an electronic input device configured to allow the user to set the current level of resistance, and

an electronic output device configured to display the current level of resistance.

2. The strength training apparatus of claim 1, further comprising:

a first handle coupled to the first cable; and

a second handle coupled to the second cable.

3. The strength training apparatus of claim 1, wherein:

the processor and the memory are further configured to calculate an amount of power expended within a period of time by the user pulling on the first cable and/or the second cable; and

the electronic output device is further configured to display the calculated amount of power.

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4. The strength training apparatus of claim 1, wherein the processor and the memory are further configured to receive and store a physical fitness goal that is inputted by the user.

5. The strength training apparatus of claim 4, wherein the processor and the memory are further configured to provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal.

6. The strength training apparatus of claim 4, wherein the processor and the memory are further configured to generate a schedule of upcoming customized workout routines for the strength training apparatus based on the stored physical fitness goal.

7. The strength training apparatus of claim 4, wherein the processor and the memory are further configured to track progress of the user toward completing the stored physical fitness goal.

8. The strength training apparatus of claim 4, wherein the processor and the memory are further configured to display on the electronic output device a progress of the user toward completing the stored physical fitness goal.

9. The strength training apparatus of claim 4, wherein the processor and the memory are further configured to display on the electronic output device that the user has achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved.

10. The strength training apparatus of claim 4, wherein the processor and the memory are further configured to display videos on the electronic output device that demonstrate how to use the strength training apparatus.

11. The strength training apparatus of claim 1, wherein the processor and the memory are further configured to store information regarding past workout routines performed by the user on the strength training apparatus.

12. The strength training apparatus of claim 11, wherein: the stored information regarding the past workout routines includes a most recent level of resistance; and the processor and the memory are further configured to suggest that the user begin an upcoming workout routine at the stored most recent level of resistance.

13. The strength training apparatus of claim 1, wherein the processor and the memory are further configured to track an amount of time that the user used the strength training apparatus.

14. The strength training apparatus of claim 1, wherein the processor and the memory are further configured to receive from the user, and store, an age of the user, a height of the user, and a weight of the user.

15. The strength training apparatus of claim 1, wherein the electronic control panel further includes a connection for communication with another device.

16. The strength training apparatus of claim 15, wherein the connection includes a radio communication link.

17. The strength training apparatus of claim 15, further comprising an application program configured to be loaded on the other device.

18. The strength training apparatus of claim 17, wherein the application program is configured to:

display information regarding past workout routines performed by the user on the strength training apparatus;

display a schedule of customized workout routines for the strength training apparatus based on a stored physical fitness goal that was inputted by the user; and

generate a custom workout routine for the strength training apparatus that includes sets and repetitions of an exercise that involves pulling on the first cable and/or the second cable.

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19. The strength training apparatus of claim 1, wherein: the strength training apparatus further comprises a magnetic mechanism coupled to the first cable and the second cable and configured to provide the multiple levels of resistance to the user pulling on the first cable and/or the second cable;

the processor and the memory are further configured to control the current level of resistance provided by the magnetic mechanism;

the electronic input device is further configured to allow the user to set the current level of resistance provided by the magnetic mechanism; and

the electronic output device is further configured to display the current level of resistance provided by the magnetic mechanism.

20. The strength training apparatus of claim 1, wherein: the strength training apparatus further comprises a magnetic unit and a flywheel coupled to the first cable and the second cable and configured to provide the multiple levels of resistance to the user pulling on the first cable and/or the second cable;

the processor and the memory are further configured to control the current level of resistance provided by the magnetic unit and the flywheel;

the electronic input device is further configured to allow the user to set the current level of resistance provided by the magnetic unit and the flywheel; and

the electronic output device is further configured to display the current level of resistance provided by the magnetic unit and the flywheel.

21. The strength training apparatus of claim 1, wherein: the strength training apparatus further comprises an upright support structure; and the first arm and the second arm are each pivotally coupled to the upright support structure.

22. The strength training apparatus of claim 21, wherein: the strength training apparatus further comprises a base member; and

the upright support structure is coupled to, and extends upward from, the base member.

23. The strength training apparatus of claim 1, wherein the processor and the memory are further configured to: receive and store a physical fitness goal that is inputted by the user;

provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal;

generate a schedule of upcoming customized workout routines for the strength training apparatus based on the stored physical fitness goal;

display on the electronic output device a progress of the user toward completing the stored physical fitness goal; track progress of the user toward completing the stored physical fitness goal;

display on the electronic output device that the user has achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved;

display videos on the electronic output device that demonstrate how to use the strength training apparatus;

store information regarding past workout routines performed by the user on the strength training apparatus, the stored information regarding the past workout routines including a most recent level of resistance;

suggest that the user begin an upcoming workout routine at the stored most recent level of resistance;

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track an amount of time that the user used the strength training apparatus; and
receive from the user, and store, an age of the user, a height of the user, and a weight of the user.

24. The strength training apparatus of claim 1, wherein: the electronic control panel further includes a radio communication link for communication with another device; and

the strength training apparatus further comprises an application program configured to be loaded on the other device, the application program configured to:

display information regarding past workout routines performed by the user on the strength training apparatus,

display a schedule of customized workout routines for the strength training apparatus based on a stored physical fitness goal that was inputted by the user, and

generate a custom workout routine for the strength training apparatus that includes sets and repetitions of an exercise that involves pulling on the first cable and/or the second cable.

25. A strength training apparatus comprising:

a first arm and a second arm each being configured to be selectively pivoted independent of each other to be selectively positioned at multiple angles relative to each other;

a first pulley coupled to an end of the first arm;

a first cable extending through the first arm and the first pulley;

a second pulley coupled to an end of the second arm;

a second cable extending through the second arm and the second pulley; and

an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic control panel including:

a processor and a memory configured to control a current level of resistance, the processor and the memory further configured to calculate an amount of power expended within a period of time by the user pulling on the first cable and/or the second cable, an electronic input device configured to allow the user to set the current level of resistance, and an electronic output device configured to display the current level of resistance, the electronic output device further configured to display the calculated amount of power.

26. The strength training apparatus of claim 25, further comprising:

a first handle coupled to the first cable; and

a second handle coupled to the second cable.

27. The strength training apparatus of claim 25, wherein the processor and the memory are further configured to receive and store a physical fitness goal that is inputted by the user via the electronic input device.

28. The strength training apparatus of claim 27, wherein the processor and the memory are further configured to provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal.

29. The strength training apparatus of claim 27, wherein the processor and the memory are further configured to generate a schedule of upcoming customized workout routines for the strength training apparatus based on the stored physical fitness goal.

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30. The strength training apparatus of claim 27, wherein the processor and the memory are further configured to track progress of the user toward completing the stored physical fitness goal.

31. The strength training apparatus of claim 27, wherein the processor and the memory are further configured to display on the electronic output device a progress of the user toward completing the stored physical fitness goal.

32. The strength training apparatus of claim 27, wherein the processor and the memory are further configured to display on the electronic output device that the user has achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved.

33. The strength training apparatus of claim 27, wherein the processor and the memory are further configured to display videos on the electronic output device that demonstrate how to use the strength training apparatus.

34. The strength training apparatus of claim 25, wherein the processor and the memory are further configured to store information regarding past workout routines performed by the user on the strength training apparatus.

35. The strength training apparatus of claim 34, wherein: the stored information regarding the past workout routines includes a most recent level of resistance; and the processor and the memory are further configured to suggest that the user begin an upcoming workout routine at the stored most recent level of resistance.

36. The strength training apparatus of claim 25, wherein the processor and the memory are further configured to track an amount of time that the user used the strength training apparatus.

37. The strength training apparatus of claim 25, wherein the processor and the memory are further configured to receive from the user, and store, an age of the user, a height of the user, and a weight of the user.

38. The strength training apparatus of claim 25, wherein the electronic control panel further includes a connection for communication with another device.

39. The strength training apparatus of claim 38, wherein the connection includes a radio communication link.

40. The strength training apparatus of claim 38, further comprising an application program configured to be loaded on the other device.

41. The strength training apparatus of claim 40, wherein the application program is configured to:

display information regarding past workout routines performed by the user on the strength training apparatus; display a schedule of customized workout routines for the strength training apparatus based on a stored physical fitness goal that was inputted by the user; and

generate a custom workout routine for the strength training apparatus that includes sets and repetitions of an exercise that involves pulling on the first cable and/or the second cable.

42. The strength training apparatus of claim 25, wherein: the strength training apparatus further comprises a magnetic mechanism coupled to the first cable and the second cable and configured to provide the multiple levels of resistance to the user pulling on the first cable and/or the second cable;

the processor and the memory are further configured to control the current level of resistance provided by the magnetic mechanism;

the electronic input device is further configured to allow the user to set the current level of resistance provided by the magnetic mechanism; and

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the electronic output device is further configured to display the current level of resistance provided by the magnetic mechanism.

43. The strength training apparatus of claim **25**, wherein: the strength training apparatus further comprises a magnetic unit and a flywheel coupled to the first cable and the second cable and configured to provide the multiple levels of resistance to the user pulling on the first cable and/or the second cable;

the processor and the memory are further configured to control the current level of resistance provided by the magnetic unit and the flywheel;

the electronic input device is further configured to allow the user to set the current level of resistance provided by the magnetic unit and the flywheel; and

the electronic output device is further configured to display the current level of resistance provided by the magnetic unit and the flywheel.

44. The strength training apparatus of claim **25**, wherein: the strength training apparatus further comprises an upright support structure; and

the first arm and the second arm are each pivotally coupled to the upright support structure.

45. The strength training apparatus of claim **44**, wherein: the strength training apparatus further comprises a base member; and

the upright support structure is coupled to, and extends upward from, the base member.

46. The strength training apparatus of claim **25**, wherein the processor and the memory are further configured to: receive and store a physical fitness goal that is inputted by the user;

provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal;

generate a schedule of upcoming customized workout routines for the strength training apparatus based on the stored physical fitness goal;

display on the electronic output device a progress of the user toward completing the stored physical fitness goal; track progress of the user toward completing the stored physical fitness goal;

display on the electronic output device that the user has achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved;

display videos on the electronic output device that demonstrate how to use the strength training apparatus;

store information regarding past workout routines performed by the user on the strength training apparatus, the stored information regarding the past workout routines including a most recent level of resistance;

suggest that the user begin an upcoming workout routine at the stored most recent level of resistance;

track an amount of time that the user used the strength training apparatus; and

receive from the user, and store, an age of the user, a height of the user, and a weight of the user.

47. The strength training apparatus of claim **25**, wherein: the electronic control panel further includes a radio communication link for communication with another device;

the strength training apparatus further comprises an application program configured to be loaded on the other device, the application program configured to:

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display information regarding past workout routines performed by the user on the strength training apparatus;

display a schedule of customized workout routines for the strength training apparatus based on a stored physical fitness goal that was inputted by the user; and

generate a custom workout routine for the strength training apparatus that includes sets and repetitions of an exercise that involves pulling on the first cable and/or the second cable.

48. A strength training apparatus comprising:

a first arm and a second arm each being configured to be selectively pivoted independent of each other to be selectively positioned at multiple angles relative to each other;

a first pulley coupled to an end of the first arm;

a first cable extending through the first arm and the first pulley;

a second pulley coupled to an end of the second arm;

a second cable extending through the second arm and the second pulley; and

an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic control panel including:

a processor and a memory configured to control a current level of resistance, the processor and the memory further configured to receive and store a physical fitness goal that is inputted by the user, the processor and the memory further configured to provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal,

an electronic input device configured to allow the user to set the current level of resistance, and

an electronic output device configured to display the current level of resistance.

49. The strength training apparatus of claim **48**, further comprising:

a first handle coupled to the first cable; and

a second handle coupled to the second cable.

50. The strength training apparatus of claim **48**, wherein: the processor and the memory are further configured to calculate an amount of power expended within a period of time by the user pulling on the first cable and/or the second cable; and

the electronic output device is further configured to display the calculated amount of power.

51. The strength training apparatus of claim **48**, wherein the processor and the memory are further configured to generate a schedule of upcoming customized workout routines for the strength training apparatus based on the stored physical fitness goal.

52. The strength training apparatus of claim **48**, wherein the processor and the memory are further configured to track progress of the user toward completing the stored physical fitness goal.

53. The strength training apparatus of claim **48**, wherein the processor and the memory are further configured to display on the electronic output device a progress of the user toward completing the stored physical fitness goal.

54. The strength training apparatus of claim **48**, wherein the processor and the memory are further configured to display on the electronic output device that the user has

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achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved.

55. The strength training apparatus of claim 48, wherein the processor and the memory are further configured to display videos on the electronic output device that demonstrate how to use the strength training apparatus.

56. The strength training apparatus of claim 48, wherein the processor and the memory are further configured to store information regarding past workout routines performed by the user on the strength training apparatus.

57. The strength training apparatus of claim 56, wherein: the stored information regarding the past workout routines includes a most recent level of resistance; and the processor and the memory are further configured to suggest that the user begin an upcoming workout routine at the stored most recent level of resistance.

58. The strength training apparatus of claim 48, wherein the processor and the memory are further configured to track an amount of time that the user used the strength training apparatus.

59. The strength training apparatus of claim 48, wherein the processor and the memory are further configured to receive from the user, and store, an age of the user, a height of the user, and a weight of the user.

60. The strength training apparatus of claim 48, wherein the electronic control panel further includes a connection for communication with another device.

61. The strength training apparatus of claim 60, wherein the connection includes a radio communication link.

62. The strength training apparatus of claim 60, further comprising an application program configured to be loaded on the other device.

63. The strength training apparatus of claim 48, wherein: the strength training apparatus further comprises a magnetic mechanism coupled to the first cable and the second cable and configured to provide the multiple levels of resistance to the user pulling on the first cable and/or the second cable;

the processor and the memory are further configured to control the current level of resistance provided by the magnetic mechanism;

the electronic input device is further configured to allow the user to set the current level of resistance provided by the magnetic mechanism; and

the electronic output device is further configured to display the current level of resistance provided by the magnetic mechanism.

64. The strength training apparatus of claim 48, wherein: the strength training apparatus further comprises a magnetic unit and a flywheel coupled to the first cable and the second cable and configured to provide the multiple levels of resistance to the user pulling on the first cable and/or the second cable;

the processor and the memory are further configured to control the current level of resistance provided by the magnetic unit and the flywheel;

the electronic input device is further configured to allow the user to set the current level of resistance provided by the magnetic unit and the flywheel; and

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the electronic output device is further configured to display the current level of resistance provided by the magnetic unit and the flywheel.

65. The strength training apparatus of claim 48, wherein: the strength training apparatus further comprises an upright support structure; and

the first arm and the second arm are each pivotally coupled to the upright support structure.

66. The strength training apparatus of claim 65, wherein: the strength training apparatus further comprises a base member; and

the upright support structure is coupled to, and extends upward from, the base member.

67. The strength training apparatus of claim 48, wherein the processor and the memory are further configured to:

generate a schedule of upcoming customized workout routines for the strength training apparatus based on the stored physical fitness goal;

display on the electronic output device a progress of the user toward completing the stored physical fitness goal;

track progress of the user toward completing the stored physical fitness goal;

display on the electronic output device that the user has achieved the stored physical fitness goal when it is determined that the stored physical fitness goal has been achieved;

display videos on the electronic output device that demonstrate how to use the strength training apparatus;

store information regarding past workout routines performed by the user on the strength training apparatus, the stored information regarding the past workout routines including a most recent level of resistance;

suggest that the user begin an upcoming workout routine at the stored most recent level of resistance;

track an amount of time that the user used the strength training apparatus; and

receive from the user, and store, an age of the user, a height of the user, and a weight of the user.

68. The strength training apparatus of claim 48, wherein: the electronic control panel further includes a radio communication link for communication with another device;

the strength training apparatus further comprises an application program configured to be loaded on the other device, the application program configured to:

display information regarding past workout routines performed by the user on the strength training apparatus;

display a schedule of customized workout routines for the strength training apparatus based on a stored physical fitness goal that was inputted by the user; and

generate a custom workout routine for the strength training apparatus that includes sets and repetitions of an exercise that involves pulling on the first cable and/or the second cable.

* * * * *

EXHIBIT 9

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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				Art Unit	3784
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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1.	9403047	B2	2016-08-02	OLSON et al.	
	2.	9011291	B2	2015-04-21	BIRRELL	
	3.	5039091		1991-08-13	JOHNSON	
	4.	5588938		1996-12-31	SCHNIDER et al.	
	5.	4533136		1985-08-06	SMITH et al.	
	6.	5484358		1996-01-16	WANG et al.	
	7.	8764609	B1	2017-07-01	ELAHMADIE	
	8.	5354252		1994-10-11	HABING	
	9.	5286243		1994-02-15	LAPCEVIC	
	10.	7226402	B1	2007-06-05	JOYA	
	11.	3926430		1975-12-16	GOOD Jr.	
	12.	6491610	B1	2002-12-10	HENN	
	13.	D352536		1994-11-15	BYRD et al.	
	14.	9254409	B2	2016-02-09	DALEBOUT et al.	
	15.	6857993	B2	2005-02-22	YEH	
	16.	7364538	B2	2008-04-29	AUCAMP	
	17.	5527245		1996-06-18	DALEBOUT et al.	
	18.	6746371		2004-06-08	BROWN et al.	
	19.	7011326		2006-03-14	SCHROEDER et al.	
	20.	7584673		2009-09-08	SHIMIZU	
	21.	7740563		2010-06-22	DALEBOUT et al.	
	22.	9616276		2017-04-11	DALEBOUT et al.	
	23.	9539458	B1	2017-01-10	ROSS	
	24.	6454679	B1	2002-09-24	RADOW	
	25.	4968028	A	1990-11-06	WEHRELL	
	26.	6030321	A	2000-02-29	FUENTES	
	27.	7942793	B2	2011-05-17	MILLS et al.	
	28.	6699159	B2	2004-03-02	ROUSE	
	29.	7540828	B2	2009-06-02	WATTERSON et al.	
	30.	5830113	A	1998-11-03	COODY et al.	
	31.	6123649	A	2000-09-26	LEE et al.	
	32.	6837830	B2	2005-01-04	ELDRIDGE	
	33.	8398529		2013-03-19	ELLIS et al.	
	34.	7575537		2009-08-18	ELLIS	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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				First Named Inventor	William Dalebout
				Art Unit	3784
				Examiner Name	
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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	35.	6027429	A	2000-02-22	DANIELS	
	36.	9878200	B2	2018-01-30	EDMONDSON	
	37.	9662529	B2	2017-05-30	MILLER et al.	
	38.	9415257	B2	2016-08-15	HABING	
	39.	9393453	B2	2016-07-19	WATTERSON	
	40.	9211433	B2	2015-12-15	HALL	
	41.	8808152	B1	2014-08-19	MIDGETT	
	42.	10426989	B2	2019-10-01	DALEBOUT	
	43.	10279212	B2	2019-05-07	DALEBOUT et al.	
	44.	9757605	B2	2014-09-12	OLSON et al.	
	45.	9968816	B2	2018-05-15	OLSON et al.	
	46.	10188890	B2	2019-01-29	OLSON et al.	
	47.	5000442		1991-01-29	DALEBOUT et al.	
	48.	6030320		2000/02/29	STEARNS et al.	
	49.	5344376		1994/09/06	BOSTIC et al.	
	50.	4725057		1988/02/16	SHIFFERAW	
	51.	6958032	B1	2005/10/25	SMITH	
	52.	10293211	B2	2019-05-21	WATTERSON et al.	
	53.	9700751	B2	2017-07-11	VERDI	
	54.	7641597	B2	2010-01-06	SCHMIDT	
	55.	5409435		1995-04-25	DANIELS	
	56.	D633581	S	2011-03-01	THULIN	
	57.	D552193	S	2007-10-02	HUSTED et al.	
	58.	D512113	S	2005-11-29	CARTER	
	59.	D511190	S	2005-11-01	PANATTA	
	60.	D457580	S	2002-05-21	WEBBER	
	61.	D746388	S	2015-12-29	HOCKRIDGE	
	62.	D520085	S	2006-05-02	WILLARDSON et al.	
	63.	D807445	S	2018-01-09	GETTLE	
	64.	8550964	B2	2013-10-08	ISH III et al.	
	65.	8500607	B2	2013-08-06	VITTONI et al.	
	66.	8096926	B1	2012-01-17	BATCA	
	67.	D868090		2019-12-03	CUTLER et al.	
	68.	10569121	B2	2020-02-25	WATTERSON	
	69.	10441840	B2	2019-10-15	DALEBOUT et al.	
	70.	8986165	B2	2015-03-24	ASHBY	
	71.	6436008	B2	2002-08-20	SKOWRONSKI et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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				First Named Inventor	William Dalebout
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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	72.	D868909		2019-12-03	GORDON CUTLER	
	73.	3123646		1964-03-03	NELSON R. EASTON	
	74.	3579339		1971-05-18	CATHERINE THE-LIN CHANG	
	75.	6488612		2002-12-03	SCOTT SECHREST	
	76.	6599223		2003-07-29	LEAO WANG	
	77.	6669607		2003-12-30	MICHAEL SLAWINSKI	
	78.	6811520		2004-11-02	PETER WU	
	79.	7311640		2007-12-25	WILFRIED BAATZ	
	80.	7381161		2008-06-03	JOSEPH K. ELLIS	
	81.	7524272		2009-04-28	ROBERT C. BURCK et al.	
	82.	7604572		2009-10-20	CHRISTOPHER STANFORD	
	83.	8029425		2011-10-04	BALANCED BODY INC	
	84.	8070657		2011-12-06	NDREW ROBERT LOACH	
	85.	8517899		2013-08-27	YIFENG ZHOU	
	86.	9044635		2015-06-02	ANDREW P. LULL	
	87.	9170223		2015-10-27	YOUNGHOON HYUN	
	88.	9468793		2016-10-18	D'MILES SALMON	
	89.	9511259		2016-12-06	DALE LLEWELYN MOUNTAIN	
	90.	10258828		2016-07-21	WILLIAM T. DALEBOUT	
	91.	10388183		2019-08-20	SCOTT R. WATTERSON	
	92.	10391361		2019-08-27	SCOTT R. WATTERSON	
	93.	10433612		2019-10-08	DARREN C. ASHBY	
	94.	10441840		2019-10-15	WILLIAM T. DALEBOUT	
	95.	10492519		2019-12-03	REBECCA LYNN CAPELL	
	96.	10493349		2019-12-03	ERIC S. WATTERSON	
	97.	10500473		2019-12-10	SCOTT R. WATTERSON	
	98.	10543395		2020-01-28	WADE A. POWELL et al.	
	99.	10561877		2020-02-18	RYAN WORKMAN	
	100.	10561893		2020-02-18	N. JEFFREY CHATTERTON	
	101.	10561894		2020-02-18	WILLIAM T. DALEBOUT	
	102.	10569121		2020-02-25	SCOTT R. WATTERSON	
	103.	10569123		2020-02-25	RYAN HOCHSTRASSER	
	104.	5362298		1994-11-08	BROWN	
	105.	10668320		2020-06-02	WATTERSON	
	106.	10758767		2020-09-01	MICHAEL L. OLSON et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1.	20100197462	A1	2010/08/05	PIANE, JR	
	2.	20030032531		2003-02-13	SIMONSON	
	3.	20020013200		2002-01-31	SECHREST	
	4.	20030045406		2003-03-06	STONE	
	5.	20020086779	A1	2002-07-04	WILKINSON	
	6.	20050148445	A1	2006-09-05	CARLE	
	7.	20130196821		2013-08-01	WATTERSON et al.	
	8.	20120088638		2012-04-12	LULL	
	9.	20050164837	A1	2005-07-28	ANDERSON et al.	
	10.	20070197346	A1	2007-08-23	SELIBER	
	11.	20050049117	A1	2005-03-03	RODGERS	
	12.	20070173392	A1	2009-10-20	STANFORD	
	13.	20030032528		2003-02-13	WU et al.	
	14.	20070287601	A1	2007-12-13	BURCK et al.	
	15.	20120277068		2012-11-01	ZHOU et al.	
	16.	20120065034		2012-03-15	LOACH	
	17.	20060148622		2006-07-06	CHEN	
	18.	20130337981		2013-12-19	HABING	
	19.	20090036276		2009-02-05	LOACH	
	20.	20030032535		2003-02-13	WANG et al.	
	21.	20030181293	A1	2003-09-25	BAATZ	
	22.	20140235409	A1	2014-08-21	SALMON et al.	
	23.	20130303334	A1	2013-11-14	ADHAMI et al.	
	24.	20140357457	A1	2014-12-04	BOEKEMA	
	25.	20040102292	A1	2004-05-27	PYLES et al.	
	26.	20130090216	A1	2013-04-11	JACKSON	
	27.	2004/0043873	A1	2004-03-04	WILKINSON et al.	
	28.	20130123073	A1	2013-05-16	OLSON et al.	
	29.	20110009249	A1	2011-01-13	CAMPANARO et al.	
	30.	20110082013	A1	2011-04-07	BASTIAN	
	31.	20070232463	A1	2007-10-04	WU	
	32.	20150352396	A1	2015-12-10	DALEBOUT	
	33.	20190269958	A1	2019-09-02	DALEBOUT et al.	
	34.	20190151698	A1	2019-05-23	OLSON et al.	
	35.	20170266481	A1	2017-09-21	DALEBOUT	
	36.	20140371035	A1	2014-12-18	MORTENSEN et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	37.	20080119337	A1	2008-05-22	WILKINS et al.	
	38.	20060240955	A1	2006-10-26	PU	
	39.	20040176227	A1	2004-09-09	ENDELMAN	
	40.	20130065732	A1	2013-03-14	HOPP	
	41.	20050130814	A1	2005-06-16	NITTA et al.	
	42.	20150038300	A1	2016-02-05	FORHAN et al.	
	43.	20060252613	A1	2006-11-09	BARNES et al.	
	44.	20140187389	A1	2014-07-03	BERG	
	45.	20030176261	A1	2003-09-18	SIMONSON et al.	
	46.	20080051256	A1	2008-02-28	ASHBY et al.	
	47.	20100255965	A1	2010-10-07	CHEN	
	48.	20060035755	A1	2006-02-16	DALEBOUT et al.	
	49.	20040043873	A1	2004-03-04	WILKINSON et al.	
	50.	20150182779	A1	2015-07-02	DALEBOUT	
	51.	20180154205	A1	2018-06-07	WATTERSON	
	52.	20180154209	A1	2019-06-07	WATTERSON	
	53.	20070123395	A1	2007-05-31	ELLIS	
	54.	20130109543	A1	2013-05-02	REYES	
	55.	20020025888	A1	2002-02-28	GERMANTON	
	56.	20040204294		2004-10-14	WILLIAM WILKINSON	
	57.	20170266533		2017-09-21	WILLIAM T. DALEBOUT	
	58.	20190232112		2019-08-01	WILLIAM T. DALEBOUT	
	59.	20190376585		2019-12-12	DALE ALAN BUCHANAN	
	60.	20200009417		2020-01-09	WILLIAM T. DALEBOUT	
	61.	20200016459		2020-01-16	KENT M. SMITH	
	62.	20030171192	A1	2003-09-11	WU et al.	
	63.	20060035768	A1	2006-02-16	KOWALLIS et al.	
	64.	20110281691	A1	2011-11-17	ELLIS	
	65.	20080242511	A1	2008-10-02	MUNOZ	
	66.	20010016542		2001-08-23	YOSHIMURA	
	67.	20200338389		2020-10-29	DALEBOUT et al.	
	68.	20200254309		2020-08-13	WATTERSON	
	69.	20200254295		2020-08-13	WATTERSON	
	70.	20170319941		2017-11-09	SMITH et al.	
	71.	20160303453		2017-12-05	KIM	
	72.	20150306440		2015-10-29	BUCHER et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	73.	20200391069	A1	2020-12-17	Olson et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear	T ⁵
	1.	2007015096	WO	A3	2007-02-08	LOACH		
	2.	105848733	CN		2016-08-10	OLSON et al.		
	3.	3086865	EP	A1	2016-11-02	OLSON et al.		
	4.	2015/100429	WO		2015-07-02	OLSON et al.		
	5.	1533710	SU		1990-01-07	KONOPLYANKO		
	6.	1997006859	WO		1997-02-27	WALKER		
	7.	2969058	EP		2016-01-20	DALEBOUT et al.		
	8.	2014153158	WO		2014-09-25	DALEBOUT et al.		
	9.	10488413	CN		2015-09-02	DALEBOUT et al.		
	10.	1708333	CN		2005-12-14	GREENHOUSE INTERNATIONAL LLC		
	11.	1658929	CN		2005-08-24	ENGELBERT		
	12.	201516258	CN		2010-06-30	XIAOTAO YAN		
	13.	201410258y	CN		2014-02-24	CHANGZHOU QIANJING REHAB EQUIP		
	14.	2172137y	CN		1994-07-20	SHANGHI WUYUAN SCIENCE AND TE		
	15.	101784308	CN		2001-11-30	HARALD GRAB		
	16.	2002053234	WO	A1	2002-07-11	WILKINSON		
	17.	2013543749	JP		2013-12-09	HARRER		
	18.	2015191445	WO		2015-12-17	ICON HEALTH & FITNESS, INC.		
	19.	201601802	TW	A	2018-12-21	ICON HEALTH & FITNESS, INC.		
	20.	106470739	CN	B	2019-06-21	ICON HEALTH & FITNESS, INC.		
	21.	104884133	CN	B	2018-02-23	ICON HEALTH & FITNESS, INC.		
	22.	201821129	TW	A	2018-06-26	ICON HEALTH & FITNESS, INC.		
	23.	2018106603	WO		2018-06-14	ICON HEALTH & FITNESS, INC.		
	24.	110035801	CN		2019-07-19	ICON HEALTH & FITNESS, INC.		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear	T ⁵
	25.	201821130	TW	A	2018-06-16	ICON HEALTH & FITNESS, INC.		
	26.	2018106598	WO		2018-06-14	ICON HEALTH & FITNESS, INC.		
	27.	1989002217	WO		1989-03-23	LINDSEY		
	28.	1188460	EP		2002-03-20	BRUNSWICK CORPORATION		
	29.	2291169Y	CN		1998-06-16	CHANG MACHINERY PLANCE WUJI		
	30.	M464203	TW		2013-11-01	YING LIAN HEALTH TECH CO., LTD.		
	31.	2841072Y	CN		2006-11-29	SHUANGYI RECREATION ARTICLES C		
	32.	103801048	CN		2014-05-21	SHENZHEN YUNDYUN TECHNOLOGY CO LTD.		
	33.	3086865	EP	A1	2020-01-22	ICON HEALTH & FITNESS, INC		
	34.	M495871	TW		2015-02-21	THING-YUAN CHANG		
	35.	2009/000059	WO		2008-12-31	ZIPTREK ECOTOURS INC.		
	36.	2009/014330	WO		2009-01-29	KIM		
	37.	3086865	EP		2020-02-03	ICON HEALTH & FITNESS INC.		
	38.	2969058	EP		2020-05-26	ICON HEALTH & FITNESS INC.		
	39.	3623020	EP		2020-03-23	ICON HEALTH & FITNESS INC.		
	40.	2002-011114	JP		2002-01-15	PANATTA SPORT SRL		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ⁵
	1.	U.S. Provisional Patent Application No. 61/920,834 filed December 26, 2013, titled "Magnetic Resistance Mechanism in a Cable Machine", 31 pages	
	2.	Exxentric, Movie Archives, obtained from The Wayback Machine for http://exxentric.com/movies/ accessed for August 19, 2015.	
	3.	International Search Report & Written Opinion for PCT Application No. PCT/US2014/072390, dated March 27, 2015, 9 pages.	

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	4.	Supplemental European Search Report for European Application No. 14874303, dated May 10, 2017, 6 pages	
	5.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petition for Inter Partes Review of U.S. Patent No. 9,403,047, filed May 5, 2017; 76 pages (paper 2)	
	6.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Olson, U.S. Patent 9,403,047, 16 pages, (Petition EX. 1001)	
	7.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Sleamaker, U.S. Patent 5,354,251, 14 pages, (Petition EX. 1002)	
	8.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Hanoun, U.S. Publication No. 2007-0232452, 28 pages, (Petition EX. 1003)	
	9.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Six-Pak, Printed Publication TuffStuff Fitness Six-Pak Trainer Owner's Manual, 19 pages, (Petition EX 1004)	
	10.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Ehrenfried, U.S. Patent No. 5,738,611, 19 pages, (Petition EX. 1005)	
	11.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Kleinman, International Publication No. WO2008/152627, 65 pages, (Petition EX. 1006)	
	12.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Lee Rawls, (Petition EX. 1007)	
	13.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, U.S. Patent No. 9,403,047 File history, 130 pages, (Petition EX. 1008)	
	14.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Provisional Patent Application No. 61/920,834, 38 pages, (Petition EX. 1009)	
	15.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Christopher Butler, 26 pages, (Petition EX. 1010)	
	16.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Power of Attorney, filed May 5, 2017, 2 pages (paper 2)	
	17.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Mandatory Notice to Patent Owner, filed May 19, 2017, 4 pages (paper 3)	

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	18.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Power of Attorney, filed May 19, 2017, 3 pages (paper 4)	
	19.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Notice of Accord Filing Date, filed June 9, 2017, 5 pages (paper 5)	
	20.	U.S. Provisional Patent Application No. 61/786,007 filed March 14, 2013, titled "Strength Training Apparatus with Flywheel and Related Methods ", 28 pages	
	21.	U.S. Provisional Patent Application No. 62/009,607 filed June 9, 2014, titled "Cable System Incorporated into a Treadmill", 32 pages.	
	22.	International Search Report & Written Opinion for PCT Application No. PCT/US2014/029353, dated August 4, 2014, 9 pages.	
	23.	Supplemental European Search Report for European Application No. 14768130, dated October 11, 2016, 9 pages	
	24.	U.S. Patent Application No. 15/472,954 filed March 29, 2017, titled "Strength Training Apparatus with Flywheel and Related Methods", 22 pages	
	25.	U.S. Patent Application No. 15/976,496 filed May 10, 2018, titled "Magnetic Resistance Mechanism in a Cable Machine", 36 pages	
	26.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petition for Inter Partes Review of U.S. Patent No. 9,616,276 (Claims 1-4, 7-10), filed May 5, 2017	
	27.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Dalebout et al., U.S. Patent 9,616,276, (Petition EX. 1001)	
	28.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Wu, U.S. Publication No. 20030171192, (Petition EX. 1002)	
	29.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Webb, U.S. Publication No. 20030017918, (Petition EX. 1003)	
	30.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Watson, U.S. Publication No. 20060234840, (Petition EX. 1004)	
	31.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Jones, U.S. Patent 4,798,378, (Petition EX. 1005)	

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	32.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Zhou et al., U.S. Patent 8,517,899, (Petition EX. 1006)	
	33.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Loach, U.S. Publication No. WO2007015096, (Petition EX. 1007)	
	34.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Rawls Declaration, Part 1 & 2, (Petition EX. 1008)	
	35.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, U.S. Patent No. 9,616,276 File History, (Petition EX. 1009)	
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	37.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Sawicky, U.S. Patent No.5,042,798, (Petition EX. 1011)	
	38.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Power of Attorney, filed May 5, 2017	
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	40.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Power of Attorney, filed May 19, 2017	
	41.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Notice of Accord Filing Date, filed June 6, 2017	
	42.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petition for Inter Partes Review of U.S. Patent No. 9,616,276 (Claims 1-20) filed May 5, 2017	
	43.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Dalebout et al., U.S. Patent 9,616,276, (Petition EX. 1001)	
	44.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Wu, U.S. Publication No. 20030171192, (Petition EX. 1002)	
	45.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Webb, U.S. Publication No. 20030017918, (Petition EX. 1003)	

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	57.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Notice of Accord Filing Date, filed June 6, 2017	
	58.	Chinese Office Action for Chinese Patent Application No. 201480003701.9 issued on April 6, 2016	
	59.	Chinese Search Report for Chinese Patent Application No. 2014800708329 issued on June 2, 2017	

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	61.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Transcript of Deposition of R. Lee Rawls, filed March 5, 2018 (Ex 2002)	
	62.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order Conduct of Proceedings, filed May 7, 2018 (Paper 20)	
	63.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Decision Institution of Inter Partes Review, filed December 4, 2017 (Paper 6)	
	64.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Scheduling Order, filed December 4, 2017 (Paper 7)	
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	70.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Granting Motion of Pro Hac Vice Admission of Mr. Hottinger, filed February 12, 2018 (Paper 13)	
	71.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Mandatory Notices, filed February 20, 2018 (Paper 14)	
	72.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Power of Attorney, filed February 20, 2018 (Paper 15)	
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	74.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List of Patent Owner, filed March 5, 2018 (Paper 17)	
	75.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, ORDER Conduct of Proceedings 37 C.F.R. Sec 42.5, filed April 27, 2018 (Paper 18)	
	76.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, ORDER Conduct of Proceedings 37 C.F.R. Sec 42.5, filed May 7, 2018 (Paper 19)	
	77.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Declaration of Tyson Hottinger in Support of Motion for Admission PRO HAC VICE, (Patent Owner EX. 2001)	
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	79.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of Patent No. 9,616,276, (Patent Owner EX. 2003)	
	80.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of Patent No. 9,616,276, (Patent Owner EX. 2004)	
	81.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of Patent No. 9,254,409 (Patent Owner EX. 2005)	
	82.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of Patent No. 9,254,409 (Patent Owner EX. 2006)	
	83.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Provisional Patent Specification of Application No. 61/786,007, (Patent Owner EX. 2007)	
	84.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Provisional Patent Drawings of Application No. 61/786,007, (Patent Owner EX. 2008)	
	85.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of Application No. 13/754,361 (Patent Owner EX. 2009)	
	86.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of Application No. 13/754,361 (Patent Owner EX. 2010)	
	87.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Webster Dictionary pg. 2211 (Merriam-Webster, Inc. 1961, 2002) (EX. 3001)	

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	88.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner Preliminary Response to Petition, filed September 5, 2017 (Paper 6)	
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	106.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of Patent Application No. 15/019,088, (Patent Owner EX. 2004)	
	107.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of Patent Application No. 14/213,793, (Patent Owner EX. 2005)	
	108.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of Patent Application No. 14/213,793, (Patent Owner EX. 2006)	
	109.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of Provisional Patent Application No. 61/786,007, (Patent Owner EX. 2007)	
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	114.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Reply in Support of Petition for Inter Partes Review; filed 6/4/2018; 18 pages (paper 21)	
	115.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Motion for Pro Hac Vice Admission, filed 6/6/2018; 5 pages (paper 22)	

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	116.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Affidavit of Lane M. Polozola in support of Petitioner's Motion of Pro Hac Vice Admission Under 37 C.F.R. 42.10(c), filed 6/6/2018, 4 pages (exhibit 1011).	
	117.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order granting Motion for Pro Hac Vice Admission - 37 C.F.R. 42.10(c), filed 6/14/2018; 4 pages (paper 23)	
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	127.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Patent Owner Demonstrative Exhibits; filed 8/24/2018, 10 pages (exhibit 2003)	
	128.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Motion for Pro Hac Vice Admission, filed 6/6/2018, 5 pages (paper 21)	
	129.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Objections to Evidence, filed 6/7/2018, 5 pages (paper 22)	

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NON PATENT LITERATURE DOCUMENTS

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	141.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of Proceeding 37 C.F.R. 42.5, filed 7/20/2018, 5 pages, (paper 34)	
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	143.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Joint Notice of Stipulation to Modify Scheduling Order, filed 8/3/2018, 3 pages (paper 36)	

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	145.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Objections to Petitioners Sur Reply, filed 8/8/2018, 5 pages (paper 38)	
	146.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Request for Oral Argument, filed 8/10/2018, 4 pages, (paper 39)	
	147.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Request for Oral Argument, filed 8/10/2018, 4 pages, (paper 40)	
	148.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Motion to Exclude Evidence, filed 8/10/2018, 11 pages (paper 41)	
	149.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order 37 C.F.R. 42.70, filed 8/14/2018, 5 pages (paper 42)	
	150.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Opposition to Patent Owner's Motion to Exclude, filed 8/16/2018, 18 pages (paper 44)	
	151.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Reply in support of Motion to Exclude, filed 8/22/2018, 8 pages, (paper 45)	
	152.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List of Patent Owner, filed 8/24/2018, 4 pages (paper 46)	
	153.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order re PO Sur-Rebuttal at Hearing, filed 8/24/2018, 4 pages (paper 47)	
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	157.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1015 - US20020055418A1 (Pyles), filed 6/4/2018, 9 pages	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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	158.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1016 - US20120258433A1 (Hope), filed 6/4/2018, 51 pages	
	159.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1017 - US7771320 (Riley), filed 6/4/2018, 44 pages	
	160.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1018 – Declaration of Christopher Cox in Support of Petitioners Oppositions to Patent Owners Motions to Amend, filed 6/4/2018, 739 pages	
	161.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1019 – Affidavit of Lane M. Polozola in Support of Petitioners Motion for Pro Hac Vice Admission, filed 6/6/2018, 4 pages	
	162.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1020 - S. Ganaja Depo Transcript, filed 8/1/2018, 58 pages	
	163.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1021 – Petitioner's Demonstrative Exhibits, filed 8/24/2018, 92 pages	
	164.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2011 – Declaration of Scott Ganaja in Support of Patent Owner's Reply to Petitioners Opposition to Patent Owners Motion to Amend, filed 7/5/2018, 42 pages	
	165.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2012 - Declaration of Richard Ferraro in Support of Patent Owner's Reply to Petitioners Opposition to Patent Owners Motion to Amend, filed 7/5/2018, 35 pages	
	166.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2013 - Cox, Christopher Depo Transcript 2018 06 26, filed 7/5/2018, 26 pages	
	167.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2014 - Patent Owner Demonstrative Exhibits, filed 8/24/2018, 21 pages	
	168.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Opposition to Patent Owner's Motion to Amend, filed 6/4/2018, 44 pages (paper 21)	
	169.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioners Motion for Pro Hac Vice Admission, filed 6/6/2018, 5 pages (paper 22)	
	170.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Objections to Evidence, filed 6/7/2018, 5 pages (paper 23)	
	171.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration R. Lee Rawls, Part 1, dated 5/12/2017, 447 pages, (paper 24)	

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	172.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration R. Lee Rawls, Part 2, dated 5/12/2017, 216 pages, (paper 24)	
	173.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order granting Motion for Pro Hac Vice Admission, filed 6/14/2018, 4 pages (paper 25)	
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	185.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Joint Notice of Stipulation to Modify Scheduling Order, filed 8/3/2018, 3 pages (paper 37)	

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	210.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2014 - Patent Owner’s Demonstrative Exhibits, filed 8/24/2018, 21 pages	
	211.	European Patent Office, Article 94(3) EPC Communication dated July 10, 2018, issued in European Patent Application No. 14768130.8–1126, 3 pages.	
	212.	United States Patent and Trademark Office; International Search Report and Written Opinion issued in application no. PCT/US2015/034665; dated October 8, 2015 (14 pages)	
	213.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No’s. IPR2017-01363, IPR2017-01407, and IPR2017-01408 Record of Oral Hearing held August 29, 2018; (paper 32) 104 pages.	

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	215.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Final Written Decision dated November 28, 2018; (paper 33) 29 pages.	
	216.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No's. IPR2017-01407, Final Written Decision dated December 3, 2018; (paper 50) 81 pages.	
	217.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No's. IPR2017-01408, Final Written Decision dated December 3, 2018; (paper 51) 82 pages.	
	218.	United States Patent application no. 16/572,272; filed September 16, 2019, titled "Cable Exercise Machine", (35 pages)	
	219.	U.S. Provisional Patent Application No. 62/310,467 filed March 18, 2016, titled "Collapsible Strength Exercise Machine", 31 pages	
	220.	U.S. Provisional Patent Application No. 62/429,977 filed December 5, 2016, titled "Pull Cable Resistance Mechanism in a Treadmill", 37 pages	
	221.	U.S. Provisional Patent Application No. 62/429,970 filed December 5, 2016, titled "Tread Belt Locking Mechanism", 37 pages	
	222.	International Bureau of WIPO; International Preliminary Report on Patentability; Int'l App No. PCT/US2017/064523 dated June 11, 2019; 7 pages	
	223.	International Bureau of WIPO; International Preliminary Report on Patentability; Int'l App No. PCT/US2017/064536 dated June 11, 2019; 8 pages.	
	224.	Chinese Second Office Action for Chinese Patent Application No. 201480003701.9 issued on November 21, 2016	
	225.	Chinese Third Office Action for Chinese Patent Application No. 201480003701.9 issued on November 24, 2017	
	226.	Chinese Office Action for Chinese Patent Application No. 201580033332 issued on February 28, 2018	
	227.	Chinese Second Office Action for Chinese Patent Application No. 201580033332 issued on November 15, 2018	

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	228.	Nordic Track Fusion CST Series; website; located at: http://www.nordictrack.com/fusion-cst-series ; accessed on 1/24/2018; 11 pages.	
	229.	United States Provisional Patent Application No. 62/804,146, filed February 11, 2019, titled CABLE AND POWER RACK EXERCISE MACHINE, 49 pages.	
	230.	United States Patent Application No. 16/780,765, filed February 3, 2020, titled CABLE AND POWER RACK EXERCISE MACHINE, 48 pages.	
	231.	United States Patent Application No. 16/787,850, filed February 11, 2020, titled "EXERCISE MACHINE", 40 pages.	
	232.	International Patent Application No. PCT/US20/17710, filed February 11, 2020, titled "EXERCISE MACHINE", 41 pages.	
	233.	First Office Action and Search Report with English translation issued in Taiwan application 106135830 on June 15, 2018.	
	234.	United States Patent Application No. 16/742,762, filed January 14, 2020, titled CONTROLLING AN EXERCISE MACHINE USING A VIDEO WORKOUT PROGRAM, 146 pages.	
	235.	United States Patent Application No. 16/750,925, filed January 2, 2020, titled SYSTEMS AND METHODS FOR AN INTERACTIVE PEDALED EXERCISE DEVICE, 54 pages.	
	236.	United States Provisional Patent Application No. 62/914,007, filed October 11, 2019, titled MODULAR EXERCISE DEVICE, 128 pages.	
	237.	United States Provisional Patent Application No. 62/934,291, filed November 12, 2019, titled EXERCISE STORAGE SYSTEM, 41 pages.	
	238.	United States Provisional Patent Application No. 62/934,297, filed November 12, 2019, titled EXERCISE STORAGE SYSTEM, 44 pages.	
	239.	Extended European Search Report for European Application No. 17879180.2, dated June 9, 2020, 8 pages	
	240.	Chinese First Office Action for Application No. 201780074846.1 dated May 9, 2020	
	241.	International Search Report and Written Opinion dated August 20, 2020 issued in International Application No. PCT/US20/17710, 10 pages.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,708
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				First Named Inventor	William Dalebout
				Art Unit	3784
				Examiner Name	
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OFFICE ACTION / NOTICE OF ALLOWANCE / ISSUE NOTIFICATION DOCUMENTS				
Examiner Initials*	Cite No.	Application Number	Mail Date	Document
	1.			

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p> <p>¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached</p>			

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				Examiner Name	
Sheet	26		26	Attorney Docket Number	I1618.10048US07

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John T. Gadd/	Date (YYYY-MM-DD)	2021-01-08
Name/Print	John T. Gadd	Registration Number	52928

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

EXHIBIT 10

Doc code: IDS

Approved for use through 07/31/2012.

Doc description: Information Disclosure Statement (IDS) Filed

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,708
	Filing Date	12-08-2020
	First Named Inventor	William Dalebout
	Art Unit	3784
	Examiner Name	
	Attorney Docket Number	I1618.10048US07

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1	D286311		1986-10-21	Icon Ip, Inc.	
	2	D304849		1989-11-28	Icon Ip, Inc.	
	3	D306468		1990-03-06	Icon Ip, Inc.	
	4	D306891		1990-03-27	Icon Ip, Inc.	
	5	D307614		1990-05-01	Icon Ip, Inc.	
	6	D307615		1990-05-01	Icon Ip, Inc.	
	7	D309167		1990-07-10	Icon Ip, Inc.	
	8	D309485		1990-07-24	Icon Ip, Inc.	
	9	D310253		1990-08-28	Icon Ip, Inc.	
	10	D313055		1990-12-18	Icon Ip, Inc.	
	11	D315765		1991-03-26	Icon Ip, Inc.	
	12	D316124		1991-04-09	Icon Ip, Inc.	
	13	D318085		1991-07-09	Icon Ip, Inc.	
	14	D318086		1991-07-09	Icon Ip, Inc.	
	15	D318699		1991-07-30	Icon Ip, Inc.	
	16	D321388		1991-11-05	Icon Ip, Inc.	
	17	D323009		1992-01-07	Icon Ip, Inc.	
	18	D323198		1992-01-14	Icon Ip, Inc.	
	19	D323199		1992-01-14	Icon Ip, Inc.	
	20	D323863		1992-02-11	Icon Ip, Inc.	
	21	D326491		1992-05-26	Icon Ip, Inc.	
	22	D332347		1993-01-12	Icon Health & Fitness, Inc.	
	23	D335511		1993-05-11	Icon Ip, Inc.	
	24	D335905		1993-05-25	Icon Ip, Inc.	
	25	D336498		1993-06-15	Icon Ip, Inc.	
	26	D337361		1993-07-13	Icon Ip, Inc.	
	27	D337666		1993-07-27	Icon Ip, Inc.	
	28	D337799		1993-07-27	Icon Ip, Inc.	
	29	D342106		1993-12-07	Icon Ip, Inc.	
	30	D344112		1994-02-08	Icon Ip, Inc.	
	31	D344557		1994-02-22	Icon Ip, Inc.	
	32	D347251		1994-05-24	Icon Ip, Inc.	

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	Attorney Docket Number	I1618.10048US07

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	33	D348493		1994-07-05	Icon Ip, Inc.	
	34	D348494		1994-07-05	Icon Ip, Inc.	
	35	D349931		1994-08-23	Icon Ip, Inc.	
	36	D351202		1994-10-04	Icon Ip, Inc.	
	37	D351435		1994-10-11	Icon Ip, Inc.	
	38	D351633		1994-10-18	Icon Ip, Inc.	
	39	D352534		1994-11-15	Icon Ip, Inc.	
	40	D353422		1994-12-13	Icon Ip, Inc.	
	41	D356128		1995-03-07	Icon Ip, Inc.	
	42	D360915		1995-08-01	Icon Ip, Inc.	
	43	D367689		1996-03-05	Icon Ip, Inc.	
	44	D370949		1996-06-18	Icon Ip, Inc.	
	45	D371176		1996-06-25	Icon Ip, Inc.	
	46	D380024		1997-06-17	Icon Health & Fitness, Inc.	
	47	D380509		1997-07-01	Icon Health & Fitness, Inc.	
	48	D384118		1997-09-23	Icon Health & Fitness, Inc.	
	49	D387825		1997-12-16	Icon Ip, Inc.	
	50	D392006		1998-03-10	Icon Health & Fitness, Inc.	
	51	D412953		1999-08-17	Icon Health & Fitness, Inc.	
	52	D413948		1999-09-14	Icon Health & Fitness, Inc.	
	53	D416596		1999-11-16	Icon Health & Fitness, Inc.	
	54	D425940		2000-05-30	Icon Ip, Inc.	
	55	D428949		2000-08-01	Icon Ip, Inc.	
	56	D450872		2001-11-20	Icon Health & Fitness, Inc.	
	57	D452338		2001-12-18	Icon Health & Fitness, Inc.	
	58	D453543		2002-02-12	Icon Health & Fitness, Inc.	
	59	D453948		2002-02-26	Icon Health & Fitness, Inc.	
	60	D507311		2005-07-12	Icon Health & Fitness, Inc.	
	61	D527776		2006-09-05	Icon Health & Fitness, Inc.	
	62	D588655		2009-03-17	Icon Health & Fitness, Inc.	
	63	D604373		2009-11-17	Icon Health & Fitness, Inc.	
	64	D635207		2011-03-29	Icon Health & Fitness, Inc.	
	65	D650451		2011-12-13	Icon Health & Fitness, Inc.	
	66	D652877		2012-01-24	Icon Health & Fitness, Inc.	

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	67	D659775		2012-05-15	Icon Health & Fitness, Inc.	
	68	D659777		2012-05-15	Icon Health & Fitness, Inc.	
	69	D660383		2012-05-22	Icon Health & Fitness, Inc.	
	70	D664613		2012-07-31	Icon Health & Fitness, Inc.	
	71	D671177		2012-11-20	Icon Health & Fitness, Inc.	
	72	D671178		2012-11-20	Icon Health & Fitness, Inc.	
	73	D673626		2013-01-01	Icon Health & Fitness, Inc.	
	74	D707763		2014-06-24	Icon Ip, Inc.	
	75	D712493		2014-09-02	Icon Health & Fitness, Inc.	
	76	D726476		2015-04-14	Icon Health & Fitness, Inc.	
	77	D731011		2015-06-02	Icon Health & Fitness, Inc.	
	78	D826350		2018-08-21	Icon Health & Fitness, Inc.	
	79	D827733		2018-09-04	Icon Health & Fitness, Inc.	
	80	D852292		2019-06-25	ICON Health & Fitness, Inc.	
	81	D864320		2016-05-10	ICON Health & Fitness, Inc.	
	82	D864321		2016-05-10	ICON Health & Fitness, Inc.	
	83	4023795		1977-05-17	Icon Health & Fitness, Inc.	
	84	4300760		1981-11-17	Icon Ip, Inc.	
	85	4413821		1983-11-08	Rocco Centafanti	
	86	4681318		1987-07-21	Icon Ip, Inc.	
	87	4684126		1987-08-04	Icon Ip, Inc.	
	88	4705028		1987-11-10	Phillip J. Melby	
	89	4728102		1988-03-01	Icon Ip, Inc.	
	90	4750736		1988-06-14	Icon Ip, Inc.	
	91	4796881		1989-01-10	Icon Ip, Inc.	
	92	4813667		1989-03-21	Icon Ip, Inc.	
	93	4830371		1989-05-16	Icon Ip, Inc.	
	94	4844451		1989-07-04	Icon Health & Fitness, Inc.	
	95	4850585		1989-07-25	Icon Ip, Inc.	
	96	4880225		1989-11-14	Icon Ip, Inc.	
	97	4883272		1989-11-28	Icon Ip, Inc.	
	98	4913396		1995-06-20	Dalebout et al.	
	99	4921242		1990-05-01	Icon Ip, Inc.	
	100	4932650		1990-06-12	Icon Ip, Inc.	

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U.S. PATENTS						
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	101	4938478		1990-07-03	Icon Ip, Inc.	
	102	4955599		1990-09-11	Icon Ip, Inc.	
	103	4971316		1990-11-20	Icon Ip, Inc.	
	104	4974832		1990-12-04	Icon Health & Fitness, Inc.	
	105	4979737		1990-12-25	Icon Health & Fitness, Inc.	
	106	4981294		1991-01-01	Icon Ip, Inc.	
	107	4998725		1991-03-12	Watterson et al.	
	108	5000443		1991-03-19	Icon Ip, Inc.	
	109	5000444		1991-03-19	Icon Ip, Inc.	
	110	5013033		1991-05-07	Icon Ip, Inc.	
	111	5014980		1991-05-14	Icon Health & Fitness, Inc.	
	112	5016871		1991-05-21	Icon Ip, Inc.	
	113	5029801		1991-07-09	Icon Health & Fitness, Inc.	
	114	5034576		1991-07-23	Icon Health & Fitness, Inc.	
	115	5058881		1991-10-22	Icon Ip, Inc.	
	116	5058882		1991-10-22	Icon Ip, Inc.	
	117	5062626		1991-11-05	Icon Ip, Inc.	
	118	5062627		1991-11-05	Proform Fitness Products, Inc.	
	119	5062632		1991-11-05	Icon Health & Fitness, Inc.	
	120	5062633		1991-11-05	Icon Health & Fitness, Inc.	
	121	5067710		1991-11-26	Watterson et al.	
	122	5072929		1991-12-17	Icon Ip, Inc.	
	123	5088729		1992-02-18	Icon Ip, Inc.	
	124	5090694		1992-02-25	Icon Ip, Inc.	
	125	5102380		1992-04-07	Icon Ip, Inc.	
	126	5104120		1992-04-14	Icon Health & Fitness, Inc.	
	127	5108093		1992-04-28	Icon Ip, Inc.	
	128	5122105		1992-06-16	Icon Health & Fitness, Inc.	
	129	5135216		1992-08-04	Bingham et al.	
	130	5135458		1992-08-04	Huang Chin C	
	131	5147265		1992-09-15	Icon Ip, Inc.	
	132	5149084		1992-09-22	Icon Ip, Inc.	
	133	5149312		1992-09-22	Harold B. Croft et al.	
	134	5158520		1992-10-27	Lemke William E	

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	135	5171196		1992-12-15	Icon Ip, Inc.	
	136	5190505		1993-03-02	Icon Ip, Inc.	
	137	5192255		1993-03-09	Dalebout et al.	
	138	5195937		1993-03-23	Icon Ip, Inc.	
	139	5203826		1993-04-20	Icon Ip, Inc.	
	140	5217487		1993-06-08	Icon Health & Fitness, Inc.	
	141	5226866		1993-07-13	Icon Ip, Inc.	
	142	5242339		1993-09-07	William E. Thornton	
	143	5244446		1993-09-14	Icon Ip, Inc.	
	144	5247853		1993-09-28	Icon Ip, Inc.	
	145	5259611		1993-11-09	Icon Ip, Inc.	
	146	5279528		1994-01-18	Dalebout et al.	
	147	5282776		1994-02-01	Dalebout	
	148	5295931		1994-03-22	Icon Ip, Inc.	
	149	5302161		1994-04-12	Icon Ip, Inc.	
	150	5316534		1994-05-31	Dalebout et al.	
	151	5328164		1994-07-12	Icon Health & Fitness, Inc.	
	152	5336142		1994-08-09	Icon Ip, Inc.	
	153	5372559		1994-12-13	Dalebout et al.	
	154	5374228		1994-12-20	Icon Ip, Inc.	
	155	5382221		1995-01-17	Icon Health & Fitness, Inc.	
	156	5385520		1995-01-31	James J. Lepine	
	157	5387168		1995-02-07	Nordictrack, Inc.	
	158	5393690		1995-02-28	Icon Health & Fitness, Inc.	
	159	5429563		1995-07-04	Icon Ip, Inc.	
	160	5431612		1995-07-11	Icon Ip, Inc.	
	161	5468205		1995-11-21	McFall et al.	
	162	5489249		1996-02-06	Brewer et al.	
	163	5492517		1996-02-20	Icon Ip, Inc.	
	164	5511740		1996-04-30	Icon Health & Fitness, Inc.	
	165	5512025		1996-04-30	Dalebout et al.	
	166	5529553		1996-06-26	Kurt E. Finlayson	
	167	5540429		1996-07-30	Icon Ip, Inc.	
	168	5549533		1996-08-27	Icon Ip, Inc.	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	169	5554085		1996-09-10	Dalebout	
	170	5569128		1996-10-29	Dalebout	
	171	5591105		1997-01-07	Icon Ip, Inc.	
	172	5591106		1997-01-07	Icon Ip, Inc.	
	173	5595556		1997-01-21	Dalebout et al.	
	174	5607375		1997-03-04	Dalebout; William T.	
	175	5611539		1997-03-18	Wattersk Scott R. Watterson	
	176	5622527		1997-04-22	Icon Ip, Inc.	
	177	5626538		1997-05-06	Icon Ip, Inc.	
	178	5626540		1997-05-06	Raymond F. Hall	
	179	5626542		1997-05-06	Icon Health & Fitness, Inc.	
	180	5637059		1997-06-10	Icon Ip, Inc.	
	181	5643153		1997-07-01	Icon Ip, Inc.	
	182	5645509		1997-07-08	Brewer et al.	
	183	5662557		1997-09-02	Watterson et al.	
	184	5667461		1997-09-16	Raymond F. Hall	
	185	5669857		1997-09-23	Watterson et al.	
	186	5672140		1997-09-30	Watterson et al.	
	187	5674156		1997-10-07	Watterson et al.	
	188	5674453		1997-10-07	Watterson et al.	
	189	5676624		1997-10-14	Watterson et al.	
	190	5683331		1997-11-04	Icon Ip, Inc.	
	191	5683332		1997-11-04	Watterson et al.	
	192	5695433		1997-12-09	Icon Ip, Inc.	
	193	5695434		1997-12-09	Icon Health & Fitness, Inc.	
	194	5695435		1997-12-09	Watterson et al.	
	195	5702325		1997-12-30	Watterson et al.	
	196	5704879		1998-01-06	Watterson et al.	
	197	5718657		1998-02-17	William T. Dalebout et al.	
	198	5720200		1998-02-24	Anderson et al.	
	199	5720698		1998-02-24	Icon Ip, Inc.	
	200	5722922		1998-03-03	Watterson et al.	
	201	5733229		1998-03-31	Dalebout et al.	
	202	5743833		1998-04-28	Watterson et al.	

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	203	5762584		1998-06-09	John J. Daniels	
	204	5762587		1998-06-09	Icon Health & Fitness, Inc.	
	205	5772560		1998-06-30	Watterson et al.	
	206	5810698		1998-09-22	Hullett et al.	
	207	5827155		1998-10-27	Jon F. Jensen	
	208	5830114		1998-11-03	Icon Ip, Inc.	
	209	5860893		1999-01-19	Watterson et al.	
	210	5860894		1999-01-19	Dalebout et al.	
	211	5899834		1999-05-04	Dalebout et al.	
	212	5921892		1999-07-13	Easton	
	213	5951441		1999-09-14	William T. Dalebout	
	214	5951448		1999-09-14	Icon Health & Fitness, Inc.	
	215	6003166		1999-12-21	Icon Ip, Inc.	
	216	6019710		2000-02-01	Icon Health & Fitness, Inc.	
	217	6027429		2000-02-22	Daniels	
	218	6033347		2000-03-07	William T. Dalebout et al.	
	219	6059692		2000-05-09	Paul L. Hickman	
	220	6113519		2000-09-05	Moriki Goto	
	221	6123646		2000-09-26	Icon Health & Fitness, Inc.	
	222	6171217		2001-01-09	Icon Ip, Inc.	
	223	6171219		2001-01-09	Roy Simonson	
	224	6174267		2001-01-16	William T. Dalebout	
	225	6193631		2001-02-27	Paul L. Hickman	
	226	6228003		2001-05-08	Hald et al.	
	227	6238323		2001-05-29	Simonson	
	228	6251052		2001-06-26	Roy Simonson	
	229	6261022		2001-07-17	William T. Dalebout et al.	
	230	6280362		2001-08-28	William T. Dalebout et al.	
	231	6296594		2001-10-02	Roy Simonson	
	232	6312363		2001-11-06	Watterson et al.	
	233	6350218		2002-02-26	William T. Dalebout et al.	
	234	6387020		2002-05-14	Roy Simonson	
	235	6413191		2002-07-02	Icon Health & Fitness, Inc.	
	236	6422980		2002-07-23	Roy Simonson	

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	237	6447424		2002-09-10	Darren C. Ashby et al.	
	238	6458060		2002-10-01	Watterson et al.	
	239	6458061		2002-10-01	Roy Simonson	
	240	6471622		2002-10-29	Hammer et al.	
	241	6506142		2003-01-14	Tomoya Itoh	
	242	6527678		2003-03-04	Wang, Leao	
	243	6547698		2003-04-15	Yasushi Inagawa	
	244	6563225		2003-05-13	Icon Health & Fitness	
	245	6601016		2003-07-29	Brown et al.	
	246	6623140		2003-09-23	Scott R. Watterson	
	247	6626799		2003-09-30	Watterson et al.	
	248	6652424		2003-11-25	William T. Dalebout	
	249	6685607		2004-02-03	Olson	
	250	6695581		2004-02-24	Icon Health & Fitness, Inc.	
	251	6701271		2004-03-02	Willner et al.	
	252	6702719		2004-03-09	Brown et al.	
	253	6712740		2004-03-30	Simonson	
	254	6719667		2004-04-13	Wong, Philip Lim-Kong	
	255	6730002		2004-05-04	Hald et al.	
	256	6743153		2004-06-01	Watterson et al.	
	257	6749537		2004-06-15	Hickman Paul L	
	258	6761667		2004-07-13	Gordon L. Cutler et al.	
	259	6770015		2004-08-03	Roy Simonson	
	260	6783482		2004-08-31	Gary E. Oglesby	
	261	6786852		2004-09-07	Watterson et al.	
	262	6796925		2004-09-28	Martha Z. Martinez	
	263	6808472		2004-10-26	Paul L. Hickman	
	264	6821230		2004-11-23	Dalebout et al.	
	265	6830540		2002-08-01	Watterson Scott R.	
	266	6863641		2005-03-08	Brown et al.	
	267	6866613		2005-03-15	Brown et al.	
	268	6875160		2005-04-05	Icon Ip, Inc.	
	269	6878101		2005-04-12	George Colley	
	270	6918858		2005-07-19	Watterson et al.	

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	271	6921351		2005-07-26	Hickman et al.	
	272	6974404		2005-12-13	Watterson et al.	
	273	6997852		2006-02-14	Watterson et al.	
	274	7025713		2006-04-11	Dalebout William T.	
	275	7044897		2006-05-16	Myers et al.	
	276	7052442		2006-05-30	Watterson Scott R.	
	277	7060006		2006-06-13	Watterson et al.	
	278	7060008		2006-06-13	Scott R. Watterson et al.	
	279	7070539		2006-07-04	Michael Wayne Brown et al.	
	280	7070542		2006-07-04	Javier Reyes	
	281	7097588		2006-08-29	Scott Watterson	
	282	7112168		2006-09-26	William T. Dalebout et al.	
	283	7125369		2006-10-24	Ken Endelman	
	284	7128693		2006-10-31	Brown et al.	
	285	7132939		2006-11-07	Patrick Tyndall	
	286	7153240		2006-12-26	Hung-Sheng Wu	
	287	7166062		2007-01-23	Watterson et al.	
	288	7166064		2007-01-23	Watterson et al.	
	289	7169087		2007-01-30	Icon Health & Fitness, Inc.	
	290	7169093		2007-01-30	Simonson et al.	
	291	7172536		2007-02-06	Wei Liu	
	292	7192387		2007-03-20	Israel Mendel	
	293	7192388		2007-03-20	Dalebout et al.	
	294	7250022		2007-07-31	Dalebout William T	
	295	7282016		2007-10-16	Simonson	
	296	7285075		2007-10-23	Cutler et al.	
	297	7344481		2008-03-18	Watterson et al.	
	298	7377882		2008-05-27	Watterson Scott R	
	299	7425188		2008-09-16	Gaylen Ercanbrack	
	300	7429236		2008-09-30	Dalebout et al.	
	301	7452311		2008-11-18	Neal Barnes	
	302	7455622		2008-11-25	Watterson et al.	
	303	7470219		2008-12-30	Cadmar Larson	
	304	7482050		2009-01-27	Olson	

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	305	7510509		2009-03-31	Hickman	
	306	7537546		2009-05-26	Watterson et al.	
	307	7537549		2009-05-26	Nelson et al.	
	308	7537552		2009-05-26	Dalebout et al.	
	309	7549947		2009-06-23	Watterson et al.	
	310	7556590		2009-07-07	Scott R. Watterson et al.	
	311	7563203		2009-07-21	Dalebout et al.	
	312	7575536		2009-08-18	Paul L. Hickman	
	313	7578771		2009-08-25	Towley III et al.	
	314	7601105		2009-10-13	Gipson, III et al.	
	315	7604573		2009-10-20	Icon Ip, Inc.	
	316	7618350		2009-11-17	Icon Ip, Inc.	
	317	7618357		2009-11-17	William T. Dalebout	
	318	7625315		2009-12-01	Hickman	
	319	7625321		2009-12-01	Simonson et al.	
	320	7628730		2009-12-08	Watterson et al.	
	321	7628737		2009-12-08	Kowallis et al.	
	322	7637847		2009-12-29	Paul L. Hickman	
	323	7645212		2010-01-12	Ashby et al.	
	324	7645213		2010-01-12	Watterson Scott R	
	325	7658698		2010-02-09	Icon Ip, Inc.	
	326	7674205		2010-03-09	Icon Ip, Inc.	
	327	7713171		2010-05-11	Hickman	
	328	7713172		2010-05-11	Watterson et al.	
	329	7713180		2010-05-11	Krista Marie Wickens	
	330	7717828		2010-05-18	Icon Ip, Inc.	
	331	7736279		2010-06-15	Icon Ip, Inc.	
	332	7749144		2010-07-06	Rodney Hammer	
	333	7766797		2010-08-03	Dalebout William T	
	334	7771320		2010-08-10	Raymond W. Riley	
	335	7771329		2010-08-10	Dalebout et al.	
	336	7775940		2010-08-17	Icon Ip, Inc.	
	337	7789800		2010-09-07	Watterson et al.	
	338	7798946		2010-09-21	Dalebout et al.	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	339	7806589		2010-10-05	Scott Tashman	
	340	7815548		2010-10-19	Lara Barre	
	341	7815550		2010-10-19	Watterson et al.	
	342	7857731		2010-12-28	Hickman et al.	
	343	7862475		2011-01-04	Scott Watterson	
	344	7862478		2011-01-04	Watterson et al.	
	345	7862483		2011-01-04	Hendrickson et al.	
	346	7862489		2011-01-04	Zdenko Savsek	
	347	7887470		2011-02-15	I-Huang Chen	
	348	7901324		2011-03-08	Masato Kodama	
	349	7901330		2011-03-08	Icon Ip, Inc.	
	350	7909740		2011-03-22	Icon Ip, Inc.	
	351	7980996		2011-07-19	Hickman	
	352	7981000		2011-07-19	Watterson et al	
	353	7985164		2011-07-26	Ashby	
	354	8007409		2011-08-30	Joseph K. Ellis	
	355	8029415		2011-10-04	Darren C. Ashby et al.	
	356	8033960		2011-10-11	Dalebout et al.	
	357	8075453		2011-12-13	William T. Wilkinson	
	358	8152702		2012-04-10	Pacheco	
	359	8157708		2012-04-17	Juliette C. Daly	
	360	8251874		2012-08-28	Ashby et al.	
	361	8257232		2012-09-04	Thierry Albert	
	362	8298123		2012-10-30	Hickman	
	363	8298125		2012-10-30	Colledge et al.	
	364	8308618		2012-11-13	Douglas G. Bayerlein	
	365	8608624		2013-12-17	Dmitry Shabodyash	
	366	8690735		2014-04-08	Watterson et al.	
	367	8740753		2014-06-03	Olson et al.	
	368	8747285		2014-06-10	Georg Hof	
	369	8758201		2014-06-24	Ashby et al.	
	370	8771153		2014-07-08	Dalebout et al.	
	371	8784270		2014-07-22	Scott R. Watterson	
	372	8784275		2014-07-22	Jeffrey Mikan	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	373	8784278		2014-07-22	Anson FLAKE	
	374	8808148		2014-08-19	Scott Watterson	
	375	8814762		2014-08-26	Jaremy Butler	
	376	8840075		2014-09-23	Michael Olson	
	377	8845493		2014-09-30	Watterson et al.	
	378	8870726		2014-10-28	Scott R. Watterson et al.	
	379	8876668		2014-11-04	Hendrickson et al.	
	380	8894549		2014-11-25	Icon Health & Fitness, Inc.	
	381	8894555		2014-11-25	Michael L. Olson	
	382	8911330		2014-12-16	Watterson et al.	
	383	8920288		2014-12-30	William Dalebout	
	384	8920347		2014-12-30	Douglas G. Bayerlein	
	385	8979709		2015-03-17	Paul Toback	
	386	8986165		2015-03-24	Ashby	
	387	8992364		2015-03-31	Icon Health & Fitness, Inc.	
	388	8992387		2015-03-31	Watterson et al.	
	389	9028368		2015-05-12	Ashby et al.	
	390	9028370		2015-05-12	Scott R. Watterson	
	391	9039578		2015-05-26	Dalebout	
	392	9072930		2015-07-07	Ashby et al.	
	393	9119983		2015-09-01	Rhea	
	394	9119988		2015-09-01	Brian Murray	
	395	9123317		2015-09-01	Watterson et al.	
	396	9126071		2015-09-08	Kent M. Smith	
	397	9126072		2015-09-08	Watterson	
	398	9138615		2015-09-22	Olson et al.	
	399	9142139		2015-09-22	Watterson et al.	
	400	9144703		2015-09-29	Dalebout et al.	
	401	9149683		2015-09-08	Kent M. Smith	
	402	9186535		2015-11-17	Gaylen Ercanbrack	
	403	9186549		2015-11-17	Watterson et al.	
	404	9186552		2015-11-17	Therese Deal	
	405	9227101		2016-01-05	Anthony Maguire	
	406	9233272		2016-01-12	Anthony J. Villani	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	407	9254416		2016-02-09	Darren C. Ashby	
	408	9278248		2016-03-08	Michael J. Tyger	
	409	9278249		2016-03-08	Icon Health & Fitness, Inc.	
	410	9278250		2016-03-08	Icon Health & Fitness, Inc.	
	411	9289648		2016-03-22	Watterson	
	412	9292935		2016-03-22	Koduri et al.	
	413	9308417		2016-04-12	Richard Grundy	
	414	9339683		2016-05-17	Dave Dilli	
	415	9339691		2016-05-17	Brammer	
	416	9352185		2016-05-31	Hendrickson et al.	
	417	9352186		2016-05-31	Watterson	
	418	9364714		2016-06-14	Koduri et al.	
	419	9375605		2016-06-28	Michael J. Tyger	
	420	9378336		2016-06-28	Peter Ohnemus	
	421	9381394		2016-07-05	Icon Health & Fitness, Inc.	
	422	9387387		2016-07-12	Dalebout	
	423	9393453		2016-07-19	Watterson	
	424	9403051		2016-08-02	Gordon Cutler	
	425	9421416		2016-08-23	Icon Health & Fitness, Inc.	
	426	9457219		2016-10-04	Smith	
	427	9457220		2016-10-04	Olson	
	428	9457222		2016-10-04	Icon Health & Fitness, Inc.	
	429	9460632		2016-10-04	Scott R. Watterson	
	430	9463356		2016-10-11	Matthew Rhea	
	431	9468794		2016-10-18	Icon Health & Fitness, Inc.	
	432	9468798		2016-10-18	William T. Dalebout	
	433	9480874		2016-11-01	Cutler	
	434	9492704		2016-11-15	Mortensen et al.	
	435	9498668		2016-11-22	Smith	
	436	9517378		2016-12-13	Ashby et al.	
	437	9521901		2016-12-20	Dalebout	
	438	9533187		2017-01-03	Dalebout	
	439	9539461		2017-01-10	Ercanbrack	
	440	9550091		2017-01-24	Brandon C. Emerson	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	441	9579544		2017-02-28	Watterson	
	442	9586086		2017-03-07	Icon Health & Fitness, Inc.	
	443	9586090		2017-03-07	Watterson et al.	
	444	9604099		2017-03-28	Icon Health & Fitness, Inc.	
	445	9616278		2017-04-11	Michael L. Olson	
	446	9623281		2017-04-18	Rick W. Hendrickson	
	447	9636567		2017-05-02	Brammer et al.	
	448	9675839		2017-06-13	Willism T. Dalebout	
	449	9682307		2017-06-20	Dalebout	
	450	9694234		2017-07-04	Dalebout et al.	
	451	9694242		2017-07-04	Darren C. Ashby	
	452	9737755		2017-08-22	Dalebout	
	453	9750454		2017-09-05	Fabian Walke	
	454	9764186		2017-09-19	William T. Dalebout	
	455	9767785		2017-09-19	Darren C. Ashby	
	456	9776032		2017-10-03	Thomas H. Moran	
	457	9795822		2017-10-24	Smith et al.	
	458	9795855		2017-10-24	Kiarash Jafarifesharaki	
	459	9808672		2017-11-07	William T. Dalebout	
	460	9849326		2017-12-26	Kent M. Smith	
	461	9878210		2018-01-30	Scott R. Watterson	
	462	9889334		2018-02-13	Ashby et al.	
	463	9889339		2018-02-13	Melanie Douglass	
	464	9937376		2018-04-10	Icon Health & Fitness, Inc.	
	465	9937377		2018-04-10	Icon Health & Fitness, Inc.	
	466	9937378		2018-04-10	Icon Health & Fitness, Inc.	
	467	9937379		2018-04-10	Nathan Mortensen	
	468	9943719		2018-04-17	Smith et al.	
	469	9943722		2018-04-17	William T. Dalebout	
	470	9948037		2018-04-17	Darren C. Ashby	
	471	9968821		2018-05-15	Icon Health & Fitness, Inc.	
	472	9968823		2018-05-15	Cutler	
	473	9980465		2018-05-29	Akio Hayashi	
	474	10010755		2018-07-03	Eric Watterson	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	475	10010756		2018-07-03	Eric S. Watterson	
	476	10029145		2018-07-24	Melanie Douglass	
	477	10046196		2018-08-14	Gaylen Ercanbrack	
	478	10065064		2018-09-04	ICON Health & Fitness, Inc.	
	479	10071285		2018-09-11	Smith et al.	
	480	10085586		2018-10-02	Smith et al.	
	481	10086254		2018-10-02	ICON Health & Fitness, Inc.	
	482	10118064		2018-11-06	William T. Cox	
	483	10136842		2018-11-27	Icon Health & Fitness, Inc.	
	484	10186161		2019-01-22	Eric C. Watterson	
	485	10207143		2019-02-19	William T. Dalebout	
	486	10207145		2019-02-19	Michael J. Tyger	
	487	10207147		2019-02-19	Gaylen Ercanbrack	
	488	10207148		2019-02-19	Wade A. Powell	
	489	10212994		2019-02-26	Scott R. Watterson	
	490	10220259		2019-03-05	Chase Brammer	
	491	10226396		2019-03-12	Darren Ashby	
	492	10226664		2019-03-12	William T. Dalebout	
	493	10252109		2019-04-09	Watterson	
	494	10272317		2019-04-30	Watterson	
	495	10343017		2019-07-09	ICON Health & Fitness, Inc.	
	496	10376736		2019-08-13	ICON Health & Fitness, Inc.	
	497	10449416		2019-10-22	William T. Dalebout	

U.S. PATENT APPLICATION PUBLICATIONS						
Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1	20020016235		2002-02-07	Icon Ip, Inc.	
	2	20020077221		2002-06-20	Icon Ip, Inc.	
	3	20020128127		2002-09-12	James Chen	
	4	20020159253		2002-10-31	Icon Ip, Inc.	
	5	20030171189		2003-09-11	Kaufman	
	6	20040091307		2004-05-13	Icon Ip, Inc.	
	7	20040171464		2004-09-02	Ashby et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,708
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	8	20040171465		2004-09-02	Icon Ip, Inc.	
	9	20050049123		2005-03-03	Icon Ip, Inc.	
	10	20050077805		2005-04-14	Icon Ip, Inc.	
	11	20050107229		2005-05-19	Icon Ip, Inc.	
	12	20050164839		2005-07-28	Icon Ip, Inc.	
	13	20050272577		2005-12-08	Icon Ip, Inc.	
	14	20050277520		2005-12-15	Richard Van Waes	
	15	20060135322		2006-06-22	Debra Rocker	
	16	20060217237		2006-09-28	Jeffrey Rhodes	
	17	20060240959		2006-10-26	Hsien-Ting Huang	
	18	20070066448		2007-03-22	Francis Pan	
	19	20070117683		2007-05-24	Icon Ip, Inc.	
	20	20070197353		2007-08-23	Hundley, Kenneth W.	
	21	20070254778		2007-11-01	ICON Health and Fitness Inc	
	22	20080242520		2008-10-02	Icon Health & Fitness, Inc.	
	23	20080300110		2008-12-04	Icon, Ip	
	24	20090105052		2009-04-23	Icon Ip, Inc.	
	25	20100242246		2010-09-30	Icon Ip, Inc.	
	26	20100317488		2010-12-16	Jose Cartaya	
	27	20110131005		2008-09-16	Hiromu Ueshima	
	28	20120237911		2012-09-20	Mark Watterson	
	29	20120295774		2012-11-22	Dalebout et al.	
	30	20130014321		2013-01-17	Kirk Sullivan	
	31	20130123083		2013-05-16	Sip	
	32	20130165195		2013-06-27	Watterson	
	33	20130172152		2013-07-04	Scott R. Watterson	
	34	20130172153		2013-07-04	Scott R. Watterson	
	35	20130178334		2013-07-11	Brammer	
	36	20130178768		2013-07-11	William Dalebout	
	37	20130190136		2013-07-25	Watterson	
	38	20130196298		2013-08-01	Scott R. Watterson	
	39	20130196822		2013-08-01	Watterson et al.	
	40	20130218585		2013-08-22	Mark Watterson	
	41	20130244836		2013-09-19	Traci Jo Maughan	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,708
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	42	20130267383		2013-10-10	Scott R. Watterson	
	43	20130268101		2013-10-10	Chase Brammer	
	44	20130274067		2013-10-17	Watterson et al.	
	45	20130281241		2013-10-24	Scott R. Watterson	
	46	20140024499		2014-01-23	Icon Health & Fitness, Inc.	
	47	20140073970		2014-03-13	Darren C. Ashby	
	48	20140121071		2014-05-01	Icon Health & Fitness, Inc.	
	49	20140135173		2014-05-15	Watterson	
	50	20140274574		2014-09-18	Shorten et al.	
	51	20140274579		2014-09-18	Olson	
	52	20140287884		2014-09-25	Dale Alan Buchanan	
	53	20140309085		2014-10-16	Watterson et al.	
	54	20150182781		2015-07-02	Icon Health & Fitness, Inc.	
	55	20150238817		2015-08-27	Scott R. Watterson	
	56	20150250418		2015-09-10	Darren C. Ashby	
	57	20150251055		2015-09-10	Darren C. Ashby	
	58	20150253210		2015-09-10	Ashby et al.	
	59	20150253735		2015-09-10	Scott R. Watterson	
	60	20150253736		2015-09-10	Scott R. Watterson	
	61	20150258560		2015-09-17	Darren C. Ashby	
	62	20150367161		2015-12-24	Andrew Richard Wiegardt	
	63	20160058335		2016-03-03	Darren C. Ashby	
	64	20160063615		2016-03-03	Watterson	
	65	20160092909		2016-03-31	Eric S. Watterson	
	66	20160101311		2016-04-14	Workman	
	67	20160107065		2016-04-21	Chase Brammer	
	68	20160121074		2018-07-03	Darren C. Ashby	
	69	20160148535		2016-05-26	Ashby	
	70	20160148536		2016-05-26	Ashby	
	71	20160158595		2016-06-09	William T. Dalebout	
	72	20160206248		2016-07-21	Sartor et al.	
	73	20160206922		2016-07-21	Dalebout et al.	
	74	20160250519		2016-09-01	Watterson	
	75	20160253918		2016-09-01	Watterson	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,708
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	76	20160339298		2016-11-24	Gennadiy Kats	
	77	20160346595		2016-12-01	Icon Health & Fitness, Inc.	
	78	20160346617		2016-12-01	Srugo et al.	
	79	20170036053		2017-02-09	ICON Health & Fitness, Inc.	
	80	20170056711		2017-03-02	Dalebout et al.	
	81	20170056715		2017-03-02	William T. Dalebout et al.	
	82	20170056726		2017-03-02	Dalebout et al.	
	83	20170124912		2017-05-04	ICON Health & Fitness, Inc.	
	84	20170193578		2017-07-06	Watterson	
	85	20170266483		2017-09-21	Dalebout et al.	
	86	20170266489		2017-09-21	ICON Health & Fitness, Inc.	
	87	20170266532		2017-09-21	Eric S. Watterson	
	88	20170270820		2017-09-21	Ashby	
	89	20180001135		2018-01-04	Powell	
	90	20180036585		2018-02-08	Powell	
	91	20180084817		2018-03-29	Capell et al.	
	92	20180085630		2018-03-29	Capell et al.	
	93	20180089396		2018-03-29	Capell et al.	
	94	20180099116		2018-04-12	Ashby	
	95	20180099179		2018-04-12	Chatterton et al.	
	96	20180099180		2018-04-12	Wilkinson	
	97	20180099205		2018-04-12	Watterson	
	98	20180111034		2018-04-26	Watterson	
	99	20180117383		2018-05-03	Icon Health & Fitness, Inc.	
	100	20180117385		2018-05-03	Watterson et al.	
	101	20180117393		2018-05-03	ICON Health & Fitness, Inc.	
	102	20180154207		2018-06-07	Ryan Hochstrasser	
	103	20180154208		2018-06-07	Wade A. Powell et al.	
	104	20180200566		2018-07-19	Jared Weston	
	105	20190058370		2019-02-21	Evan Charles Tinney	
	106	20190080624		2019-03-14	Eric C. Watterson	
	107	20190168072		2019-06-06	Chase Brammer	
	108	20190178313		2019-06-13	David Wrobel	
	109	20190192898		2019-06-27	William T. Dalebout	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,708
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U.S. PATENT APPLICATION PUBLICATIONS						
Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	110	20190192952		2019-06-27	Wade A. Powell	
	111	20190209893		2019-07-11	Scott R. Watterson	
	112	20190223612		2019-07-25	Scott R. Watterson	
	113	20190269971		2019-09-05	ICON Health & Fitness, Inc.	
	114	20190275366		2019-09-12	ICON Health & Fitness, Inc.	
	115	20190282852		2019-09-19	William T. Dalebout	
	116	20190328079		2019-10-31	ICON Health & Fitness, Inc.	
	117	20190329091		2019-10-31	ICON Health & Fitness, Inc.	

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

(Not for submission under 37 CFR 1.99)

Application Number	17/115,708
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U.S. PATENT APPLICATIONS

Examiner Initials*	Cite No.	Document Number	Kind Code ¹	Filing Date	Name of Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1	29568648		2016-06-20	ICON Health & Fitness, Inc.	
	2	29702127		2019-09-16	ICON Health & Fitness, Inc.	
	3	13088007		2011-04-15	Scott R. Watterson	
	4	15821386		2017-11-22	ICON Health & Fitness, Inc.	
	5	15973176		2018-05-07	Melanie Douglass	
	6	16378022		2019-04-08	William T. Dalebout	
	7	16435104		2019-06-07	Dale Alan Buchanan	
	8	16506085		2019-07-09	ICON Health & Fitness, Inc.	
	9	62697833		2018-07-13	ICON Health & Fitness, Inc.	
	10	62796952		2019-01-25	ICON Health & Fitness, Inc.	
	11	62804146		2019-02-11	ICON Health & Fitness, Inc.	
	12	62804685		2019-02-12	ICON Health & Fitness, Inc.	
	13	62852118		2019-05-22	David Hays	
	14	62866576		2019-06-25	ICON Health & Fitness, Inc.	
	15	62887391		2019-08-15	ICON Health & Fitness, Inc.	
	16	62887398		2019-08-15	ICON Health & Fitness, Inc.	
	17	62897113		2019-09-09	ICON Health & Fitness, Inc.	
	18	62842118		2019-05-23	ICON Health & Fitness, Inc.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear	T ⁵
	1	203989681	CN		2014-12-10	ZHONGGUAN ZESHENG BEIJING TECHNOLOGY CO LTD		X
	2	100829774	KR		2008-05-16	KIM JAE CHUL		X
	3	I339127	TW		2008-08-21	CHANG CHUN-YI		X
	4	M422981	TW		2012-02-21	Lifegear Taiwan Ltd		X
	5	M504568	TW		2015-03-01	Shen et al.		X
	6	2000030717	WO		2000-06-02	ICON Health & Fitness, Inc.		
	7	2009014330	WO		2009-01-29	Jae-Chul Kim		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,708
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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ⁵
	1	English Translation of Search Report for Taiwan Patent Application No. 104131458 issued 2016-06-03	
	2	English Translation of Search Report for Taiwan Patent Application No. 105126694 issued 2017-10-03	
	3	International Search Report and Written Opinion issued in PCT/US2016/048692 dated 2016-12-01	
	4	International Search Report and Written Opinion issued in PCT/US2017/023002 dated 2017-06-28.	
	5	International Search Report and Written Opinion issued in PCT/US2017/022989 dated 2017-05-23.	

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p> <p>¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if the reference is accompanied by a translation into English or if a concise explanation of the relevance, as presently understood by the undersigned attorney of record, of each listed reference that is not in the English language and is unaccompanied by a translation into English is provided with the reference.</p>			

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John T. Gadd/	Date (YYYY-MM-DD)	2021-01-11
Name/Print	John T. Gadd	Registration Number	52928

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

EXHIBIT 11

US010967214B1

(12) **United States Patent**
Olson et al.

(10) **Patent No.:** **US 10,967,214 B1**
(45) **Date of Patent:** ***Apr. 6, 2021**

(54) **CABLE EXERCISE MACHINE**

(56) **References Cited**

(71) Applicant: **ICON Health & Fitness, Inc.**, Logan, UT (US)

U.S. PATENT DOCUMENTS

(72) Inventors: **Michael L. Olson**, Providence, UT (US); **William T. Dalebout**, North Logan, UT (US)

3,123,646 A 3/1964 Easton
3,579,339 A 5/1971 Chang
(Continued)

(73) Assignee: **ICON HEALTH & FITNESS, INC.**, Logan, UT (US)

FOREIGN PATENT DOCUMENTS

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

CN 2172137 y 7/1994
CN 2291169 Y 6/1998
(Continued)

This patent is subject to a terminal disclaimer.

OTHER PUBLICATIONS

U.S. Appl. No. 61/920,834, filed Dec. 26, 2013, titled "Magnetic Resistance Mechanism in a Cable Machine", 31 pages.

(21) Appl. No.: **17/115,699**

(Continued)

(22) Filed: **Dec. 8, 2020**

Primary Examiner — Andrew S Lo

Related U.S. Application Data

(74) *Attorney, Agent, or Firm* — Maschoff Brennan

(63) Continuation of application No. 17/008,148, filed on Aug. 31, 2020, which is a continuation of application (Continued)

(51) **Int. Cl.**
A63B 21/00 (2006.01)
A63B 21/005 (2006.01)
(Continued)

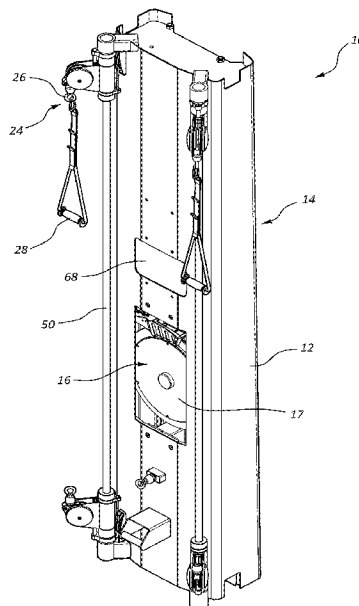
(52) **U.S. Cl.**
CPC **A63B 21/00192** (2013.01); **A63B 21/0051** (2013.01); **A63B 21/153** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC A63B 21/00192; A63B 24/0087; A63B 23/03566; A63B 21/225; A63B 24/0062;
(Continued)

(57) **ABSTRACT**

A cable exercise machine may include a first vertical guide, a first pull cable routed through a first pulley, a second vertical guide, a second pull cable routed through a second pulley, and an electronic control panel. The first pulley may be movable along a length of the first vertical guide, and the second pulley may be movable along a length of the second vertical guide. The electronic control panel may be configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable, electronically allow for adjustment of the level of resistance to the user pulling on the first pull cable and/or the second pull cable, and electronically present the adjusted level of resistance to the user.

75 Claims, 7 Drawing Sheets



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Related U.S. Application Data

- No. 16/258,356, filed on Jan. 25, 2019, now Pat. No. 10,758,767, which is a continuation of application No. 15/976,496, filed on May 10, 2018, now Pat. No. 10,188,890, which is a continuation of application No. 15/696,841, filed on Sep. 6, 2017, now Pat. No. 9,968,816, which is a continuation of application No. 15/226,703, filed on Aug. 2, 2016, now Pat. No. 9,757,605, which is a continuation of application No. 14/582,493, filed on Dec. 24, 2014, now Pat. No. 9,403,047.
- (60) Provisional application No. 61/920,834, filed on Dec. 26, 2013.
- (51) **Int. Cl.**
A63B 21/22 (2006.01)
A63B 23/035 (2006.01)
A63B 23/12 (2006.01)
A63B 24/00 (2006.01)
A63B 71/06 (2006.01)
- (52) **U.S. Cl.**
 CPC *A63B 21/154* (2013.01); *A63B 21/225* (2013.01); *A63B 21/4035* (2015.10); *A63B 21/4043* (2015.10); *A63B 23/03541* (2013.01); *A63B 23/03566* (2013.01); *A63B 23/1245* (2013.01); *A63B 24/0062* (2013.01); *A63B 24/0087* (2013.01); *A63B 71/0622* (2013.01); *A63B 2220/17* (2013.01); *A63B 2220/40* (2013.01); *A63B 2220/805* (2013.01); *A63B 2230/75* (2013.01)
- (58) **Field of Classification Search**
 CPC *A63B 21/4035*; *A63B 21/154*; *A63B 23/1245*; *A63B 21/0051*; *A63B 21/153*; *A63B 23/03541*; *A63B 21/4043*; *A63B 2220/40*; *A63B 2230/75*; *A63B 2220/17*; *A63B 2220/805*; *A63B 71/0622*
 See application file for complete search history.
- (56) **References Cited**
 U.S. PATENT DOCUMENTS
- | | | | |
|-----------|---|---------|-------------------|
| 3,926,430 | A | 12/1975 | Good, Jr. |
| 4,023,795 | A | 5/1977 | Pauls |
| 4,300,760 | A | 11/1981 | Bobroff |
| 4,413,821 | A | 11/1983 | Centafanti |
| 4,533,136 | A | 8/1985 | Smith et al. |
| D286,311 | S | 10/1986 | Martinell et al. |
| 4,681,318 | A | 7/1987 | Lay |
| 4,684,126 | A | 8/1987 | Dalebout et al. |
| 4,705,028 | A | 11/1987 | Melby |
| 4,725,057 | A | 2/1988 | Shifferaw |
| 4,728,102 | A | 3/1988 | Pauls |
| 4,750,736 | A | 6/1988 | Watterson |
| 4,796,881 | A | 1/1989 | Watterson |
| 4,813,667 | A | 3/1989 | Watterson |
| 4,830,371 | A | 5/1989 | Lay |
| 4,844,451 | A | 7/1989 | Bersonnet et al. |
| 4,850,585 | A | 7/1989 | Dalebout |
| D304,849 | S | 11/1989 | Watterson |
| 4,880,225 | A | 11/1989 | Lucas et al. |
| 4,883,272 | A | 11/1989 | Lay |
| D306,468 | S | 3/1990 | Watterson |
| D306,891 | S | 3/1990 | Watterson |
| 4,913,396 | A | 4/1990 | Dalebout et al. |
| D307,614 | S | 5/1990 | Bingham et al. |
| D307,615 | S | 5/1990 | Bingham et al. |
| 4,921,242 | A | 5/1990 | Watterson |
| 4,932,650 | A | 6/1990 | Bingham et al. |
| D309,167 | S | 7/1990 | Griffin |
| D309,485 | S | 7/1990 | Bingham et al. |
| 4,938,478 | A | 7/1990 | Lay |
| D310,253 | S | 8/1990 | Bersonnet et al. |
| 4,955,599 | A | 9/1990 | Bersonnet et al. |
| 4,968,028 | A | 11/1990 | Wehrell |
| 4,971,316 | A | 11/1990 | Dalebout et al. |
| D313,055 | S | 12/1990 | Watterson |
| 4,974,832 | A | 12/1990 | Dalebout |
| 4,979,737 | A | 12/1990 | Kock |
| 4,981,294 | A | 1/1991 | Dalebout et al. |
| 5,000,442 | A | 1/1991 | Dalebout et al. |
| D315,765 | S | 3/1991 | Measom et al. |
| 4,998,725 | A | 3/1991 | Watterson et al. |
| 5,000,443 | A | 3/1991 | Dalebout et al. |
| 5,000,444 | A | 3/1991 | Dalebout et al. |
| D316,124 | S | 4/1991 | Dalebout et al. |
| 5,013,033 | A | 5/1991 | Watterson et al. |
| 5,014,980 | A | 5/1991 | Bersonnet et al. |
| 5,016,871 | A | 5/1991 | Dalebout et al. |
| D318,085 | S | 7/1991 | Jacobson et al. |
| D318,086 | S | 7/1991 | Bingham et al. |
| D318,699 | S | 7/1991 | Jacobson et al. |
| 5,029,801 | A | 7/1991 | Dalebout et al. |
| 5,034,576 | A | 7/1991 | Dalebout et al. |
| 5,039,091 | A | 8/1991 | Johnson |
| 5,058,881 | A | 10/1991 | Measom |
| 5,058,882 | A | 10/1991 | Dalebout et al. |
| D321,388 | S | 11/1991 | Dalebout |
| 5,062,626 | A | 11/1991 | Dalebout et al. |
| 5,062,627 | A | 11/1991 | Bingham |
| 5,062,632 | A | 11/1991 | Dalebout et al. |
| 5,062,633 | A | 11/1991 | Engel et al. |
| 5,067,710 | A | 11/1991 | Watterson et al. |
| 5,072,929 | A | 12/1991 | Peterson et al. |
| D323,009 | S | 1/1992 | Dalebout et al. |
| D323,198 | S | 1/1992 | Dalebout et al. |
| D323,199 | S | 1/1992 | Dalebout et al. |
| D323,863 | S | 2/1992 | Watterson |
| 5,088,729 | A | 2/1992 | Dalebout |
| 5,090,694 | A | 2/1992 | Pauls et al. |
| 5,102,380 | A | 4/1992 | Jacobson et al. |
| 5,104,120 | A | 4/1992 | Watterson et al. |
| 5,108,093 | A | 4/1992 | Watterson |
| D326,491 | S | 5/1992 | Dalebout |
| 5,122,105 | A | 6/1992 | Engel et al. |
| 5,135,216 | A | 8/1992 | Bingham et al. |
| 5,135,458 | A | 8/1992 | Huang |
| 5,147,265 | A | 9/1992 | Pauls et al. |
| 5,149,084 | A | 9/1992 | Dalebout et al. |
| 5,149,312 | A | 9/1992 | Croft et al. |
| 5,158,520 | A | 10/1992 | Lemke |
| 5,171,196 | A | 12/1992 | Lynch |
| D332,347 | S | 1/1993 | Radt et al. |
| 5,190,505 | A | 3/1993 | Dalebout et al. |
| 5,192,255 | A | 3/1993 | Dalebout et al. |
| 5,195,937 | A | 3/1993 | Engel et al. |
| 5,203,826 | A | 4/1993 | Dalebout |
| D335,511 | S | 5/1993 | Engel et al. |
| D335,905 | S | 5/1993 | Cutter et al. |
| D336,498 | S | 6/1993 | Engel et al. |
| 5,217,487 | A | 6/1993 | Engel et al. |
| D337,361 | S | 7/1993 | Engel et al. |
| D337,666 | S | 7/1993 | Peterson et al. |
| D337,799 | S | 7/1993 | Cutter et al. |
| 5,226,866 | A | 7/1993 | Engel et al. |
| 5,242,339 | A | 9/1993 | Thornton |
| 5,244,446 | A | 9/1993 | Engel et al. |
| 5,247,853 | A | 9/1993 | Dalebout |
| 5,259,611 | A | 11/1993 | Dalebout et al. |
| D342,106 | S | 12/1993 | Campbell et al. |
| 5,279,528 | A | 1/1994 | Dalebout et al. |
| D344,112 | S | 2/1994 | Smith |
| D344,557 | S | 2/1994 | Ashby |
| 5,282,776 | A | 2/1994 | Dalebout |
| 5,286,243 | A | 2/1994 | Lapcevic |
| 5,295,931 | A | 3/1994 | Dreibelbis et al. |
| 5,302,161 | A | 4/1994 | Loubert et al. |
| D347,251 | S | 5/1994 | Dreibelbis et al. |
| 5,316,534 | A | 5/1994 | Dalebout et al. |

US 10,967,214 B1

Page 3

(56)

References Cited

U.S. PATENT DOCUMENTS

D348,493 S	7/1994	Ashby	5,722,922 A	3/1998	Watterson et al.
D348,494 S	7/1994	Ashby	5,733,229 A	3/1998	Dalebout et al.
5,328,164 A	7/1994	Soga	5,743,833 A	4/1998	Watterson et al.
D349,931 S	8/1994	Bostic et al.	5,762,584 A	6/1998	Daniels
5,336,142 A	8/1994	Dalebout et al.	5,762,587 A	6/1998	Dalebout et al.
5,344,376 A	9/1994	Bostic et al.	5,772,560 A	6/1998	Watterson et al.
D351,202 S	10/1994	Bingham	5,810,698 A	9/1998	Hullett et al.
D351,435 S	10/1994	Peterson et al.	5,827,155 A	10/1998	Jensen
D351,633 S	10/1994	Bingham	5,830,113 A	11/1998	Coody et al.
5,354,252 A	10/1994	Habing	5,830,114 A	11/1998	Halfen et al.
D352,534 S	11/1994	Dreibelbis et al.	5,860,893 A	1/1999	Watterson et al.
D352,536 S	11/1994	Byrd et al.	5,860,894 A	1/1999	Dalebout et al.
5,362,298 A	11/1994	Brown	5,899,834 A	5/1999	Dalebout et al.
D353,422 S	12/1994	Bostic et al.	5,921,892 A	7/1999	Easton
5,372,559 A	12/1994	Dalebout et al.	D412,953 S	8/1999	Armstrong
5,374,228 A	12/1994	Buisman et al.	D413,948 S	9/1999	Dalebout
5,382,221 A	1/1995	Hsu et al.	5,951,441 A	9/1999	Dalebout
5,385,520 A	1/1995	Lepine	5,951,448 A	9/1999	Bolland
5,387,168 A	2/1995	Bostic	D416,596 S	11/1999	Armstrong
5,393,690 A	2/1995	Fu et al.	6,003,166 A	12/1999	Hald et al.
D356,128 S	3/1995	Smith et al.	6,019,710 A	2/2000	Dalebout et al.
5,409,435 A	4/1995	Daniels	6,027,429 A	2/2000	Daniels
5,429,563 A	7/1995	Engel et al.	6,030,320 A	2/2000	Stearns et al.
5,431,612 A	7/1995	Holden	6,030,321 A	2/2000	Fuentes
D360,915 S	8/1995	Bostic et al.	6,033,347 A	3/2000	Dalebout et al.
5,468,205 A	11/1995	McFall et al.	D425,940 S	5/2000	Halfen et al.
5,484,358 A	1/1996	Wang et al.	6,059,692 A	5/2000	Hickman
5,489,249 A	2/1996	Brewer et al.	D428,949 S	8/2000	Simonson
5,492,517 A	2/1996	Bostic et al.	6,113,519 A	9/2000	Goto
D367,689 S	3/1996	Wilkinson et al.	6,123,646 A	9/2000	Colassi
5,511,740 A	4/1996	Loubert et al.	6,123,649 A	9/2000	Lee et al.
5,512,025 A	4/1996	Dalebout et al.	6,171,217 B1	1/2001	Cutler
D370,949 S	6/1996	Furner	6,171,219 B1	1/2001	Simonson
D371,176 S	6/1996	Furner	6,174,267 B1	1/2001	Dalebout
5,527,245 A	6/1996	Dalebout et al.	6,193,631 B1	2/2001	Hickman
5,529,553 A	6/1996	Finlayson	6,228,003 B1	5/2001	Hald et al.
5,540,429 A	7/1996	Dalebout et al.	6,238,323 B1	5/2001	Simonson
5,549,533 A	8/1996	Olson et al.	6,251,052 B1	6/2001	Simonson
5,554,085 A	9/1996	Dalebout	6,261,022 B1	7/2001	Dalebout et al.
5,569,128 A	10/1996	Dalebout	6,280,362 B1	8/2001	Dalebout et al.
5,588,938 A	12/1996	Schnider et al.	6,296,594 B1	10/2001	Simonson
5,591,105 A	1/1997	Dalebout et al.	D450,872 S	11/2001	Dalebout et al.
5,591,106 A	1/1997	Dalebout et al.	6,312,363 B1	11/2001	Watterson et al.
5,595,556 A	1/1997	Dalebout et al.	D452,338 S	12/2001	Dalebout et al.
5,607,375 A	3/1997	Dalebout	D453,543 S	2/2002	Cutler
5,611,539 A	3/1997	Watterson	D453,948 S	2/2002	Cutler
5,622,527 A	4/1997	Watterson et al.	6,350,218 B1	2/2002	Dalebout et al.
5,626,538 A	5/1997	Dalebout et al.	D457,580 S	5/2002	Webber
5,626,540 A	5/1997	Hall	6,387,020 B1	5/2002	Simonson
5,626,542 A	5/1997	Dalebout et al.	6,413,191 B1	7/2002	Harris et al.
D380,024 S	6/1997	Novak et al.	6,422,980 B1	7/2002	Simonson
5,637,059 A	6/1997	Dalebout	6,436,008 B1	8/2002	Skowronski et al.
D380,509 S	7/1997	Wilkinson et al.	6,447,424 B1	9/2002	Ashby et al.
5,643,153 A	7/1997	Nylen et al.	6,454,679 B1	9/2002	Radow
5,645,509 A	7/1997	Brewer et al.	6,458,060 B1	10/2002	Watterson et al.
D384,118 S	9/1997	Deblauw	6,458,061 B2	10/2002	Simonson
5,662,557 A	9/1997	Watterson et al.	6,471,622 B1	10/2002	Hammer et al.
5,667,461 A	9/1997	Hall	6,488,612 B2	12/2002	Sechrest
5,669,857 A	9/1997	Watterson et al.	6,491,610 B1	12/2002	Henn
5,672,140 A	9/1997	Watterson et al.	6,506,142 B2	1/2003	Itoh
5,674,156 A	10/1997	Watterson et al.	6,527,678 B1	3/2003	Wang
5,674,453 A	10/1997	Watterson et al.	6,547,698 B2	4/2003	Inagawa
5,676,624 A	10/1997	Watterson et al.	6,563,225 B2	5/2003	Soga et al.
5,683,331 A	11/1997	Dalebout	6,599,223 B2	7/2003	Wang
5,683,332 A	11/1997	Watterson et al.	6,601,016 B1	7/2003	Brown et al.
D387,825 S	12/1997	Fleck et al.	6,623,140 B2	9/2003	Watterson
5,695,433 A	12/1997	Buisman	6,626,799 B2	9/2003	Watterson et al.
5,695,434 A	12/1997	Dalebout et al.	6,652,424 B2	11/2003	Dalebout
5,695,435 A	12/1997	Watterson et al.	6,669,607 B2	12/2003	Slawinski
5,702,325 A	12/1997	Watterson et al.	6,685,607 B1	2/2004	Olson
5,704,879 A	1/1998	Watterson et al.	6,695,581 B2	2/2004	Wasson et al.
5,718,657 A	2/1998	Dalebout et al.	6,699,159 B2	3/2004	Rouse
5,720,200 A	2/1998	Anderson et al.	6,701,271 B2	3/2004	Willner et al.
5,720,698 A	2/1998	Dalebout et al.	6,702,719 B1	3/2004	Brown et al.
D392,006 S	3/1998	Dalebout et al.	6,712,740 B2	3/2004	Simonson
			6,719,667 B2	4/2004	Wong
			6,730,002 B2	5/2004	Hald et al.
			6,743,153 B2	6/2004	Watterson et al.
			6,746,371 B1	6/2004	Brown et al.

US 10,967,214 B1

Page 4

(56)

References Cited

U.S. PATENT DOCUMENTS

6,749,537 B1	6/2004	Hickman	7,578,771 B1	8/2009	Towley, III et al.
6,761,667 B1	7/2004	Cutler et al.	7,584,673 B2	9/2009	Shimizu
6,770,015 B2	8/2004	Simonson	7,601,105 B1	10/2009	Gipson, III et al.
6,783,482 B2	8/2004	Oglesby	7,604,572 B2	10/2009	Stanford
6,786,852 B2	9/2004	Watterson et al.	7,604,573 B2	10/2009	Dalebout et al.
6,796,925 B2	9/2004	Martinez	D604,373 S	11/2009	Dalebout et al.
6,808,472 B1	10/2004	Hickman	7,618,350 B2	11/2009	Dalebout et al.
6,811,520 B2	11/2004	Wu	7,618,357 B2	11/2009	Dalebout
6,821,230 B2	11/2004	Dalebout et al.	7,625,315 B2	12/2009	Hickman
6,830,540 B2	12/2004	Watterson	7,625,321 B2	12/2009	Simonson et al.
6,837,830 B2	1/2005	Eldridge	7,628,730 B1	12/2009	Watterson et al.
6,857,993 B2	2/2005	Yeh	7,628,737 B2	12/2009	Kowallis et al.
6,863,641 B1	3/2005	Brown et al.	7,637,847 B1	12/2009	Hickman
6,866,613 B1	3/2005	Brown et al.	7,641,597 B2	1/2010	Schmidt
6,875,160 B2	4/2005	Watterson et al.	7,645,212 B2	1/2010	Ashby et al.
6,878,101 B2	4/2005	Colley	7,645,213 B2	1/2010	Watterson
D507,311 S	7/2005	Butler et al.	7,658,698 B2	2/2010	Pacheco et al.
6,918,858 B2	7/2005	Watterson et al.	7,674,205 B2	3/2010	Dalebout et al.
6,921,351 B1	7/2005	Hickman et al.	7,713,171 B1	5/2010	Hickman
6,958,032 B1	10/2005	Smith	7,713,172 B2	5/2010	Watterson et al.
D511,190 S	11/2005	Panatta	7,713,180 B2	5/2010	Wickens
D512,113 S	11/2005	Carter	7,717,828 B2	5/2010	Simonson et al.
6,974,404 B1	12/2005	Watterson et al.	7,736,279 B2	6/2010	Dalebout et al.
6,997,852 B2	2/2006	Watterson et al.	7,740,563 B2	6/2010	Dalebout et al.
7,011,326 B1	3/2006	Schroeder et al.	7,749,144 B2	7/2010	Hammer
7,025,713 B2	4/2006	Dalebout	7,766,797 B2	8/2010	Dalebout
D520,085 S	5/2006	Willardson et al.	7,771,320 B2	8/2010	Riley
7,044,897 B2	5/2006	Myers et al.	7,771,329 B2	8/2010	Dalebout et al.
7,052,442 B2	5/2006	Watterson	7,775,940 B2	8/2010	Dalebout et al.
7,060,006 B1	6/2006	Watterson et al.	7,789,800 B1	9/2010	Watterson et al.
7,060,008 B2	6/2006	Watterson et al.	7,798,946 B2	9/2010	Dalebout et al.
7,070,539 B2	7/2006	Brown et al.	7,806,589 B2	10/2010	Tashman
7,070,542 B2	7/2006	Reyes	7,815,548 B2	10/2010	Barre
7,097,588 B2	8/2006	Watterson	7,815,550 B2	10/2010	Watterson et al.
D527,776 S	9/2006	Willardson et al.	7,857,731 B2	12/2010	Hickman et al.
7,112,168 B2	9/2006	Dalebout et al.	7,862,475 B2	1/2011	Watterson
7,125,369 B2	10/2006	Endelman	7,862,478 B2	1/2011	Watterson et al.
7,128,693 B2	10/2006	Brown et al.	7,862,483 B2	1/2011	Hendrickson et al.
7,132,939 B2	11/2006	Tyndall	7,862,489 B2	1/2011	Savsek
7,153,240 B1	12/2006	Wu	7,887,470 B2	2/2011	Chen
7,166,062 B1	1/2007	Watterson et al.	D633,581 S	3/2011	Thulin
7,166,064 B2	1/2007	Watterson et al.	D635,207 S	3/2011	Dalebout et al.
7,169,087 B2	1/2007	Ercanbrack et al.	7,901,324 B2	3/2011	Kodama
7,169,093 B2	1/2007	Simonson et al.	7,901,330 B2	3/2011	Dalebout et al.
7,172,536 B2	2/2007	Liu	7,909,740 B2	3/2011	Dalebout et al.
7,192,387 B2	3/2007	Mendel	7,942,793 B2	5/2011	Mills et al.
7,192,388 B2	3/2007	Dalebout et al.	7,980,996 B2	7/2011	Hickman
7,226,402 B1	6/2007	Joya	7,981,000 B2	7/2011	Watterson et al.
7,250,022 B2	7/2007	Dalebout	7,985,164 B2	7/2011	Ashby
D552,193 S	10/2007	Husted et al.	8,007,409 B2	8/2011	Ellis
7,282,016 B2	10/2007	Simonson	8,029,415 B2	10/2011	Ashby et al.
7,285,075 B2	10/2007	Cutler et al.	8,029,425 B2	10/2011	Bronston et al.
7,311,640 B2	12/2007	Baatz	8,033,960 B1	10/2011	Dalebout et al.
7,344,481 B2	3/2008	Watterson et al.	D650,451 S	12/2011	Olson et al.
7,364,538 B2	4/2008	Aucamp	8,070,657 B2	12/2011	Loach
7,377,882 B2	5/2008	Watterson	8,075,453 B1	12/2011	Wilkinson
7,381,161 B2	6/2008	Ellis	D652,877 S	1/2012	Dalebout et al.
7,425,188 B2	9/2008	Ercanbrack	8,096,926 B1	1/2012	Batca
7,429,236 B2	9/2008	Dalebout et al.	8,152,702 B2	4/2012	Pacheco
7,452,311 B2	11/2008	Barnes	8,157,708 B2	4/2012	Daly
7,455,622 B2	11/2008	Watterson et al.	D659,775 S	5/2012	Olson et al.
7,470,219 B2	12/2008	Larson	D659,777 S	5/2012	Watterson et al.
7,482,050 B2	1/2009	Olson	D660,383 S	5/2012	Watterson et al.
D588,655 S	3/2009	Utykanski	D664,613 S	7/2012	Dalebout et al.
7,510,509 B2	3/2009	Hickman	8,251,874 B2	8/2012	Ashby et al.
7,524,272 B2	4/2009	Burck et al.	8,257,232 B2	9/2012	Albert
7,537,546 B2	5/2009	Watterson et al.	8,298,123 B2	10/2012	Hickman
7,537,549 B2	5/2009	Nelson et al.	8,298,125 B2	10/2012	Colledge et al.
7,537,552 B2	5/2009	Dalebout et al.	D671,177 S	11/2012	Sip
7,540,828 B2	6/2009	Watterson et al.	D671,178 S	11/2012	Sip
7,549,947 B2	6/2009	Watterson et al.	8,308,618 B2	11/2012	Bayerlein
7,556,590 B2	7/2009	Watterson et al.	D673,626 S	1/2013	Olson et al.
7,563,203 B2	7/2009	Dalebout et al.	8,398,529 B2	3/2013	Ellis et al.
7,575,536 B1	8/2009	Hickman	8,500,607 B2	8/2013	Vittone et al.
7,575,537 B2	8/2009	Ellis	8,517,899 B2	8/2013	Zhou
			8,550,964 B2	10/2013	Ish, III et al.
			8,608,624 B2	12/2013	Shabodyash
			8,690,735 B2	4/2014	Watterson et al.
			D707,763 S	6/2014	Cutler

US 10,967,214 B1

Page 5

(56)

References Cited

U.S. PATENT DOCUMENTS

8,740,753 B2	6/2014	Olson et al.	9,460,632 B2	10/2016	Watterson
8,747,285 B2	6/2014	Hof	9,463,356 B2	10/2016	Rhea
8,758,201 B2	6/2014	Ashby et al.	9,468,793 B2	10/2016	Salmon
8,764,609 B1	7/2014	Elahmadie	9,468,794 B2	10/2016	Barton
8,771,153 B2	7/2014	Dalebout et al.	9,468,798 B2	10/2016	Dalebout
8,784,270 B2	7/2014	Watterson	9,480,874 B2	11/2016	Cutler
8,784,275 B2	7/2014	Mikan	9,492,704 B2	11/2016	Mortensen et al.
8,784,278 B2	7/2014	Flake	9,498,668 B2	11/2016	Smith
8,808,148 B2	8/2014	Watterson	9,511,259 B2	12/2016	Mountain
8,808,152 B1	8/2014	Midgett	9,517,378 B2	12/2016	Ashby et al.
8,814,762 B2	8/2014	Butler	9,521,901 B2	12/2016	Dalebout
D712,493 S	9/2014	Ercanbrack et al.	9,533,187 B2	1/2017	Dalebout
8,840,075 B2	9/2014	Olson	9,539,458 B1	1/2017	Ross
8,845,493 B2	9/2014	Watterson et al.	9,539,461 B2	1/2017	Ercanbrack
8,870,726 B2	10/2014	Watterson et al.	9,550,091 B2	1/2017	Emerson
8,876,668 B2	11/2014	Hendrickson et al.	9,579,544 B2	2/2017	Watterson
8,894,549 B2	11/2014	Colledge	9,586,086 B2	3/2017	Dalebout et al.
8,894,555 B2	11/2014	Olson	9,586,090 B2	3/2017	Watterson et al.
8,911,330 B2	12/2014	Watterson et al.	9,604,099 B2	3/2017	Taylor
8,920,288 B2	12/2014	Dalebout	9,616,276 B2	4/2017	Dalebout et al.
8,920,347 B2	12/2014	Bayerlein	9,616,278 B2	4/2017	Olson
8,979,709 B2	3/2015	Toback	9,623,281 B2	4/2017	Hendrickson
8,986,165 B2	3/2015	Ashby	9,636,567 B2	5/2017	Brammer et al.
8,992,364 B2	3/2015	Law et al.	9,662,529 B2	5/2017	Miller et al.
8,992,387 B2	3/2015	Watterson et al.	9,675,839 B2	6/2017	Dalebout
D726,476 S	4/2015	Ercanbrack	9,682,307 B2	6/2017	Dalebout
9,011,291 B2	4/2015	Birrell	9,694,234 B2	7/2017	Dalebout et al.
9,028,368 B2	5/2015	Ashby et al.	9,694,242 B2	7/2017	Ashby
9,028,370 B2	5/2015	Watterson	9,700,751 B2	7/2017	Verdi
9,039,578 B2	5/2015	Dalebout	9,737,755 B2	8/2017	Dalebout
D731,011 S	6/2015	Buchanan	9,750,454 B2	9/2017	Walke
9,044,635 B2	6/2015	Lull	9,757,605 B2	9/2017	Olson et al.
9,072,930 B2	7/2015	Ashby et al.	9,764,186 B2	9/2017	Dalebout
9,119,983 B2	9/2015	Rhea	9,767,785 B2	9/2017	Ashby
9,119,988 B2	9/2015	Murray	9,776,032 B2	10/2017	Moran
9,123,317 B2	9/2015	Watterson et al.	9,795,822 B2	10/2017	Smith et al.
9,126,071 B2	9/2015	Smith	9,795,855 B2	10/2017	Jafarifesharaki
9,126,072 B2	9/2015	Watterson	9,808,672 B2	11/2017	Dalebout
9,138,615 B2	9/2015	Olson et al.	9,849,326 B2	12/2017	Smith
9,142,139 B2	9/2015	Watterson et al.	D807,445 S	1/2018	Gettle
9,144,703 B2	9/2015	Dalebout et al.	9,878,200 B2	1/2018	Edmondson
9,149,683 B2	9/2015	Smith	9,878,210 B2	1/2018	Watterson
9,170,223 B2	10/2015	Hyun	9,889,334 B2	2/2018	Ashby et al.
9,186,535 B2	11/2015	Ercanbrack	9,889,339 B2	2/2018	Douglass
9,186,549 B2	11/2015	Watterson et al.	9,937,376 B2	4/2018	McInnelly et al.
9,186,552 B1	11/2015	Deal	9,937,377 B2	4/2018	McInnelly et al.
D746,388 S	12/2015	Hockridge	9,937,378 B2	4/2018	Dalebout et al.
9,211,433 B2	12/2015	Hall	9,937,379 B2	4/2018	Mortensen
9,227,101 B2	1/2016	Maguire	9,943,719 B2	4/2018	Smith et al.
9,233,272 B2	1/2016	Villani	9,943,722 B2	4/2018	Dalebout
9,254,409 B2	2/2016	Dalebout et al.	9,948,037 B2	4/2018	Ashby
9,254,416 B2	2/2016	Ashby	9,968,816 B2	5/2018	Olson et al.
9,278,248 B2	3/2016	Tyger	9,968,821 B2	5/2018	Finlayson et al.
9,278,249 B2	3/2016	Watterson	9,968,823 B2	5/2018	Cutler
9,278,250 B2	3/2016	Buchanan	9,980,465 B2	5/2018	Hayashi
9,289,648 B2	3/2016	Watterson	10,010,755 B2	7/2018	Watterson
9,292,935 B2	3/2016	Koduri et al.	10,010,756 B2	7/2018	Watterson
9,308,417 B2	4/2016	Grundy	10,029,145 B2	7/2018	Douglass
9,339,683 B2	5/2016	Dilli	D826,350 S	8/2018	Hochstrasser
9,339,691 B2	5/2016	Brammer	10,046,196 B2	8/2018	Ercanbrack
9,352,185 B2	5/2016	Hendrickson et al.	D827,733 S	9/2018	Hochstrasser
9,352,186 B2	5/2016	Watterson	10,065,064 B2	9/2018	Smith et al.
9,364,714 B2	6/2016	Koduri et al.	10,071,285 B2	9/2018	Smith et al.
9,375,605 B2	6/2016	Tyger	10,085,586 B2	10/2018	Smith et al.
9,378,336 B2	6/2016	Ohnemus	10,086,254 B2	10/2018	Watterson
9,381,394 B2	7/2016	Mortensen et al.	10,118,064 B1	11/2018	Cox
9,387,387 B2	7/2016	Dalebout	10,136,842 B2	11/2018	Ashby
9,393,453 B2	7/2016	Watterson	10,186,161 B2	1/2019	Watterson
9,403,047 B2	8/2016	Olson et al.	10,188,890 B2	1/2019	Olson et al.
9,403,051 B2	8/2016	Cutler	10,207,143 B2	2/2019	Dalebout
9,415,257 B2	8/2016	Habing	10,207,145 B2	2/2019	Tyger
9,421,416 B2	8/2016	Mortensen et al.	10,207,147 B2	2/2019	Ercanbrack
9,457,219 B2	10/2016	Smith	10,207,148 B2	2/2019	Powell
9,457,220 B2	10/2016	Olson	10,212,994 B2	2/2019	Watterson
9,457,222 B2	10/2016	Dalebout	10,220,259 B2	3/2019	Brammer
			10,226,396 B2	3/2019	Ashby
			10,226,664 B2	3/2019	Dalebout
			10,252,109 B2	4/2019	Watterson
			10,258,828 B2	4/2019	Dalebout

US 10,967,214 B1

Page 6

(56)

References Cited

U.S. PATENT DOCUMENTS

10,272,317	B2	4/2019	Watterson	2007/0254778	A1	11/2007	Ashby
10,279,212	B2	5/2019	Dalebout et al.	2007/0287601	A1	12/2007	Burck et al.
10,293,211	B2	5/2019	Watterson et al.	2008/0051256	A1	2/2008	Ashby et al.
D852,292	S	6/2019	Cutler	2008/0119337	A1	5/2008	Wilkins et al.
10,343,017	B2	7/2019	Jackson	2008/0242511	A1	10/2008	Munoz
10,376,736	B2	8/2019	Powell et al.	2008/0242520	A1	10/2008	Hubbard
10,388,183	B2	8/2019	Watterson	2008/0300110	A1	12/2008	Smith et al.
10,391,361	B2	8/2019	Watterson	2009/0036276	A1	2/2009	Loach
D864,320	S	10/2019	Weston	2009/0105052	A1	4/2009	Dalebout et al.
D864,321	S	10/2019	Weston	2010/0197462	A1	8/2010	Piane, Jr.
10,426,989	B2	10/2019	Dalebout	2010/0242246	A1	9/2010	Dalebout et al.
10,433,612	B2	10/2019	Ashby	2010/0255965	A1	10/2010	Chen
10,441,840	B2	10/2019	Dalebout et al.	2010/0317488	A1	12/2010	Cartaya
10,449,416	B2	10/2019	Dalebout	2011/0009249	A1	1/2011	Campanaro et al.
D868,090	S	12/2019	Cutler et al.	2011/0082013	A1	4/2011	Bastian
D868,909	S	12/2019	Cutler	2011/0131005	A1	6/2011	Ueshima
10,492,519	B2	12/2019	Capell	2011/0281691	A1	11/2011	Ellis
10,493,349	B2	12/2019	Watterson	2012/0065034	A1	3/2012	Loach
10,500,473	B2	12/2019	Watterson	2012/0088638	A1	4/2012	Lull
10,543,395	B2	1/2020	Powell et al.	2012/0237911	A1	9/2012	Watterson
10,561,877	B2	2/2020	Workman	2012/0277068	A1	11/2012	Zhou et al.
10,561,893	B2	2/2020	Chatterton	2012/0295774	A1	11/2012	Dalebout et al.
10,561,894	B2	2/2020	Dalebout	2013/0014321	A1	1/2013	Sullivan
10,569,121	B2	2/2020	Watterson	2013/0065732	A1	3/2013	Hopp
10,569,123	B2	2/2020	Hochstrasser	2013/0090216	A1	4/2013	Jackson
10,668,320	B2	6/2020	Watterson	2013/0109543	A1	5/2013	Reyes
10,758,767	B2	9/2020	Olson et al.	2013/0123073	A1	5/2013	Olson et al.
2001/0016542	A1	8/2001	Yoshimura	2013/0123083	A1	5/2013	Sip
2002/0013200	A1	1/2002	Sechrest	2013/0165195	A1	6/2013	Watterson
2002/0016235	A1	2/2002	Ashby et al.	2013/0172152	A1	7/2013	Watterson
2002/0025888	A1	2/2002	Germanton	2013/0172153	A1	7/2013	Watterson
2002/0077221	A1	6/2002	Dalebout et al.	2013/0178334	A1	7/2013	Brammer
2002/0086779	A1	7/2002	Wilkinson	2013/0178768	A1	7/2013	Dalebout
2002/0128127	A1	9/2002	Chen	2013/0190136	A1	7/2013	Watterson
2002/0159253	A1	10/2002	Dalebout et al.	2013/0196298	A1	8/2013	Watterson
2003/0032528	A1	2/2003	Wu et al.	2013/0196821	A1	8/2013	Watterson et al.
2003/0032531	A1	2/2003	Simonson	2013/0196822	A1	8/2013	Watterson et al.
2003/0032535	A1	2/2003	Wang et al.	2013/0218585	A1	8/2013	Watterson
2003/0045406	A1	3/2003	Stone	2013/0244836	A1	9/2013	Maughan
2003/0171189	A1	9/2003	Kaufman	2013/0267383	A1	10/2013	Watterson
2003/0171192	A1	9/2003	Wu et al.	2013/0268101	A1	10/2013	Brammer
2003/0176261	A1	9/2003	Simonson et al.	2013/0274067	A1	10/2013	Watterson et al.
2003/0181293	A1	9/2003	Baatz	2013/0281241	A1	10/2013	Watterson
2004/0043873	A1	3/2004	Wilkinson et al.	2013/0303334	A1	11/2013	Adhami et al.
2004/0091307	A1	5/2004	James	2013/0337981	A1	12/2013	Habing
2004/0102292	A1	5/2004	Pyles et al.	2014/0024499	A1	1/2014	Watterson
2004/0171464	A1	9/2004	Ashby et al.	2014/0073970	A1	3/2014	Ashby
2004/0171465	A1	9/2004	Hald et al.	2014/0121071	A1	5/2014	Strom et al.
2004/0176227	A1	9/2004	Endelman	2014/0135173	A1	5/2014	Watterson
2004/0204294	A2	10/2004	Wilkinson	2014/0187389	A1	7/2014	Berg
2005/0049117	A1	3/2005	Rodgers	2014/0235409	A1	8/2014	Salmon et al.
2005/0049123	A1	3/2005	Dalebout et al.	2014/0274574	A1	9/2014	Shorten et al.
2005/0077805	A1	4/2005	Dalebout et al.	2014/0274579	A1	9/2014	Olson
2005/0107229	A1	5/2005	Wickens	2014/0287884	A1	9/2014	Buchanan
2005/0130814	A1	6/2005	Nitta et al.	2014/0309085	A1	10/2014	Watterson et al.
2005/0148445	A1	7/2005	Carle	2014/0357457	A1	12/2014	Boekema
2005/0164837	A1	7/2005	Anderson et al.	2014/0371035	A1	12/2014	Mortensen et al.
2005/0164839	A1	7/2005	Watterson et al.	2015/0038300	A1	2/2015	Forhan et al.
2005/0272577	A1	12/2005	Olson et al.	2015/0182779	A1	7/2015	Dalebout
2005/0277520	A1	12/2005	Van Waes	2015/0182781	A1	7/2015	Watterson
2006/0035755	A1	2/2006	Dalebout et al.	2015/0238817	A1	8/2015	Watterson
2006/0035768	A1	2/2006	Kowalllis et al.	2015/0250418	A1	9/2015	Ashby
2006/0135322	A1	6/2006	Rocker	2015/0251055	A1	9/2015	Ashby
2006/0148622	A1	7/2006	Chen	2015/0253210	A1	9/2015	Ashby et al.
2006/0217237	A1	9/2006	Rhodes	2015/0253735	A1	9/2015	Watterson
2006/0240955	A1	10/2006	Pu	2015/0253736	A1	9/2015	Watterson
2006/0240959	A1	10/2006	Huang	2015/0258560	A1	9/2015	Ashby
2006/0252613	A1	11/2006	Barnes et al.	2015/0306440	A1	10/2015	Bucher et al.
2007/0066448	A1	3/2007	Pan	2015/0352396	A1	12/2015	Dalebout
2007/0117683	A1	5/2007	Ercanbrack et al.	2015/0367161	A1	12/2015	Wiegardt
2007/0123395	A1	5/2007	Ellis	2016/0058335	A1	3/2016	Ashby
2007/0173392	A1	7/2007	Stanford	2016/0063615	A1	3/2016	Watterson
2007/0197346	A1	8/2007	Seliber	2016/0092909	A1	3/2016	Watterson
2007/0197353	A1	8/2007	Hundley	2016/0101311	A1	4/2016	Workman
2007/0232463	A1	10/2007	Wu	2016/0107065	A1	4/2016	Brammer
				2016/0121074	A1	5/2016	Ashby
				2016/0148535	A1	5/2016	Ashby
				2016/0148536	A1	5/2016	Ashby
				2016/0158595	A1	6/2016	Dalebout

US 10,967,214 B1

Page 7

(56) **References Cited**
U.S. PATENT DOCUMENTS

2016/0206248	A1	7/2016	Sartor et al.
2016/0206922	A1	7/2016	Dalebout et al.
2016/0250519	A1	9/2016	Watterson
2016/0253918	A1	9/2016	Watterson
2016/0303453	A1	10/2016	Kim
2016/0339298	A1	11/2016	Kats
2016/0346595	A1	12/2016	Dalebout et al.
2016/0346617	A1	12/2016	Srugo et al.
2017/0036053	A1	2/2017	Smith et al.
2017/0056711	A1	3/2017	Dalebout et al.
2017/0056715	A1	3/2017	Dalebout et al.
2017/0056726	A1	3/2017	Dalebout et al.
2017/0124912	A1	5/2017	Ashby et al.
2017/0193578	A1	7/2017	Watterson
2017/0266481	A1	9/2017	Dalebout
2017/0266483	A1	9/2017	Dalebout et al.
2017/0266489	A1	9/2017	Douglass et al.
2017/0266532	A1	9/2017	Watterson
2017/0266533	A1	9/2017	Dalebout
2017/0270820	A1	9/2017	Ashby
2017/0319941	A1	11/2017	Smith et al.
2018/0001135	A1	1/2018	Powell
2018/0036585	A1	2/2018	Powell
2018/0084817	A1	3/2018	Capell et al.
2018/0085630	A1	3/2018	Capell et al.
2018/0089396	A1	3/2018	Capell et al.
2018/0099116	A1	4/2018	Ashby
2018/0099179	A1	4/2018	Chatterton et al.
2018/0099180	A1	4/2018	Wilkinson
2018/0099205	A1	4/2018	Watterson
2018/0111034	A1	4/2018	Watterson
2018/0117383	A1	5/2018	Workman
2018/0117385	A1	5/2018	Watterson et al.
2018/0117393	A1	5/2018	Ercanbrack
2018/0154205	A1	6/2018	Watterson
2018/0154207	A1	6/2018	Hochstrasser
2018/0154208	A1	6/2018	Powell et al.
2018/0154209	A1	6/2018	Watterson
2018/0200566	A1	7/2018	Weston
2019/0058370	A1	2/2019	Tinney
2019/0080624	A1	3/2019	Watterson
2019/0151698	A1	5/2019	Olson et al.
2019/0168072	A1	6/2019	Brammer
2019/0178313	A1	6/2019	Wrobel
2019/0192898	A1	6/2019	Dalebout
2019/0192952	A1	6/2019	Powell
2019/0209893	A1	7/2019	Watterson
2019/0223612	A1	7/2019	Watterson
2019/0232112	A1	8/2019	Dalebout
2019/0269958	A1	9/2019	Dalebout et al.
2019/0269971	A1	9/2019	Capell et al.
2019/0275366	A1	9/2019	Powell
2019/0282852	A1	9/2019	Dalebout
2019/0328079	A1	10/2019	Ashby et al.
2019/0329091	A1	10/2019	Powell et al.
2019/0376585	A1	12/2019	Buchanan
2020/0009417	A1	1/2020	Dalebout
2020/0016459	A1	1/2020	Smith
2020/0254295	A1	8/2020	Watterson
2020/0254309	A1	8/2020	Watterson
2020/0338389	A1	10/2020	Dalebout et al.
2020/0391069	A1	12/2020	Olson et al.

FOREIGN PATENT DOCUMENTS

CN	101784308	11/2001
CN	1658929	8/2005
CN	1708333	12/2005
CN	2841072	Y 11/2006
CN	201516258	6/2010
CN	201410258	y 2/2014
CN	103801048	5/2014
CN	203989681	12/2014
CN	10488413	9/2015
CN	105848733	8/2016

CN	104884133	B	2/2018
CN	106470739	B	6/2019
CN	110035801		7/2019
EP	1188460		3/2002
EP	2969058		1/2016
EP	3086865	A1	11/2016
EP	3086865	A1	1/2020
EP	3086865		2/2020
EP	3623020		3/2020
EP	2969058		5/2020
JP	2002-011114		1/2002
JP	2013543749		12/2013
KR	100829774		5/2008
SU	1533710		1/1990
TW	1339127		8/2008
TW	M422981		2/2012
TW	M464203		11/2013
TW	M495871		2/2015
TW	M504568		3/2015
TW	201821129	A	6/2018
TW	201821130	A	6/2018
TW	201601802	A	12/2018
WO	1989002217		3/1989
WO	1997006859		2/1997
WO	2000030717		6/2000
WO	2002053234	A1	7/2002
WO	2007015096	A3	2/2007
WO	2009/000059		12/2008
WO	2009/014330		1/2009
WO	2009014330		1/2009
WO	2014153158		9/2014
WO	2015/100429		7/2015
WO	2015191445		12/2015
WO	2018106598		6/2018
WO	2018106603		6/2018

OTHER PUBLICATIONS

Exxentric, Movie Archives, obtained from the Wayback Machine for <http://exxentric.com/movies/> accessed for Aug. 19, 2015.

International Search Report & Written Opinion for PCT Application No. PCT/US2014/072390, dated Mar. 27, 2015, 9 pages.

Supplemental European Search Report for European Application No. 14874303, dated May 10, 2017, 6 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petition for Inter Partes Review of U.S. Pat. No. 9,403,047, filed May 5, 2017; 76 pages (paper 2).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Olson, U.S. Pat. No. 9,403,047, 16 pages, (Petition Ex. 1001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Sleamaker, U.S. Pat. No. 5,354,251, 14 pages, (Petition Ex. 1002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Hanoun, U.S. Publication No. 2007-0232452, 28 pages, (Petition Ex. 1003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Six-Pak, Printed Publication TuftStuff Fitness Six-Pak Trainer Owner's Manual, 19 pages, (Petition Ex. 1004).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Ehrenfried, U.S. Pat. No. 5,738,611, 19 pages, (Petition Ex. 1005).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Kleinman, International Publication No. WO2008/152627, 65 pages, (Petition Ex. 1006).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Lee Rawls, (Petition Ex. 1007).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, U.S. Pat. No. 9,403,047 File history, 130 pages, (Petition Ex. 1008).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, U.S. Appl. No. 61/920,834, 38 pages, (Petition Ex. 1009).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Christopher Butler, 26 pages, (Petition Ex. 1010).

US 10,967,214 B1

Page 8

(56) **References Cited**

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Power of Attorney, filed May 5, 2017, 2 pages (paper 2).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Mandatory Notice to Patent Owner, filed May 19, 2017, 4 pages (paper 3).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Power of Attorney, filed May 19, 2017, 3 pages (paper 4).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Notice of Accord Filing Date, filed Jun. 9, 2017, 5 pages (paper 5).

U.S. Appl. No. 61/786,007, filed Mar. 14, 2013, titled "Strength Training Apparatus with Flywheel and Related Methods", 28 pages.

U.S. Appl. No. 62/009,607, filed Jun. 9, 2014, titled "Cable System Incorporated into a Treadmill", 32 pages.

International Search Report and Written Opinion for PCT Application No. PCT/US2014/029353, dated Aug. 4, 2014, 9 pages.

Supplemental European Search Report for European Application No. 14768130, dated Oct. 11, 2016, 9 pages.

U.S. Appl. No. 15/472,954, filed Mar. 29, 2017, titled "Strength Training Apparatus with Flywheel and Related Methods", 22 pages.

U.S. Appl. No. 15/976,496, filed May 10, 2018, titled "Magnetic Resistance Mechanism in a Cable Machine", 36 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petition for Inter Partes Review of U.S. Pat. No. 9,616,276 (Claims 1-4, 7-10), filed May 5, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Dalebout et al., U.S. Pat. No. 9,616,276, (Petition Ex. 1001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Wu, U.S. Publication No. 20030171192, (Petition Ex. 1002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Webb, U.S. Publication No. 20030017918, (Petition Ex. 1003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Watson, U.S. Publication No. 20060234840, (Petition Ex. 1004).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Jones, U.S. Pat. No. 4,798,378, (Petition Ex. 1005).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Zhou et al., U.S. Pat. No. 8,517,899, (Petition Ex. 1006).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Loach, U.S. Publication No. WO2007015096, (Petition Ex. 1007).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Rawls Declaration, Part 1 & 2, (Petition Ex. 1008).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, U.S. Pat. No. 9,616,276 File History, (Petition Ex. 1009).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, U.S. Appl. No. 61/786,007 File History, (Petition Ex. 1010).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Sawicky, U.S. Pat. No. 5,042,798, (Petition Ex. 1011).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Power of Attorney, filed May 5, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Mandatory Notice to Patent Owner, filed May 19, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Power of Attorney, filed May 19, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Notice of Accord Filing Date, filed Jun. 6, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petition for Inter Partes Review of U.S. Pat. No. 9,616,276 (Claims 1-20) filed May 5, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Dalebout et al., U.S. Pat. No. 9,616,276, (Petition Ex. 1001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Wu, U.S. Publication No. 20030171192, (Petition Ex. 1002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Webb, U.S. Publication No. 20030017918, (Petition Ex. 1003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Watson, U.S. Publication No. 20060234840, (Petition Ex. 1004).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Jones, U.S. Pat. No. 4,798,378, (Petition Ex. 1005).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Zhou et al., U.S. Pat. No. 8,517,899, (Petition Ex. 1006).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Loach, U.S. Publication No. WO2007015096, (Petition Ex. 1007).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Rawls Declaration, Part 1 & 2, (Petition Ex. 1008).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, U.S. Pat. No. 9,616,276 File History, (Petition Ex. 1009).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, U.S. Appl. No. 61/786,007 File History, (Petition Ex. 1010).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Sawicky, U.S. Pat. No. 5,042,798, (Petition Ex. 1011).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Power of Attorney, filed May 5, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Mandatory Notice to Patent Owner, filed May 19, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Power of Attorney, filed May 19, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Notice of Accord Filing Date, filed Jun. 6, 2017.

Chinese Office Action for Chinese Patent Application No. 201480003701.9 dated Apr. 6, 2016.

Chinese Search Report for Chinese Patent Application No. 2014800708329 dated Jun. 2, 2017.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Tyson Hottinger in Support of Motion for Admission Pro Hac Vice, filed Feb. 1, 2018 (Ex 2001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Transcript of Deposition of R. Lee Rawls, filed Mar. 5, 2018 (Ex 2002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order Conduct of Proceedings, filed May 7, 2018 (Paper 20).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Decision Institution of Inter Partes Review, filed Dec. 4, 2017 (Paper 6).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Scheduling Order, filed Dec. 4, 2017 (Paper 7).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order, filed Jan. 19, 2018 (Paper 8).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Notice of Deposition of R. Lee Rawls, filed Jan. 19, 2018 (Paper 9).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Unopposed Motion for Pro Hac Vice Admission of Tyson Hottinger, filed Feb. 1, 2018 (Paper 10).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Current Exhibit List, filed Feb. 1, 2018 (Paper 11).

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Page 9

(56) **References Cited**

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Updated Notice of Deposition of R. Lee Rawls, filed Feb. 1, 2018 (Paper 12).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Granting Motion of Pro Hac Vice Admission of Mr. Hottinger, filed Feb. 12, 2018 (Paper 13).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Mandatory Notices, filed Feb. 20, 2018 (Paper 14).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Power of Attorney, filed Feb. 20, 2018 (Paper 15).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Motion to Amend, filed Mar. 5, 2018 (Paper 16).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List of Patent Owner, filed Mar. 5, 2018 (Paper 17).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of Proceedings 37 C.F.R. Sec 42.5, filed Apr. 27, 2018 (Paper 18).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of Proceedings 37 C.F.R. Sec 42.5, filed May 7, 2018 (Paper 19).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Declaration of Tyson Hottinger in Support of Motion for Admission Pro Hac Vice, (Patent Owner Ex. 2001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Claim Listing of Proposed Substitute Claims for Patent Owner Motion to Amend, (Patent Owner Ex. 2002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of U.S. Pat. No. 9,616,276, (Patent Owner Ex. 2003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of U.S. Pat. No. 9,616,276, (Patent Owner Ex. 2004).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of U.S. Pat. No. 9,254,409 (Patent Owner Ex. 2005).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of U.S. Pat. No. 9,254,409 (Patent Owner Ex. 2006).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Provisional Patent Specification of U.S. Appl. No. 61/786,007, (Patent Owner Ex. 2007).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Provisional Patent Drawings of U.S. Appl. No. 61/786,007, (Patent Owner Ex. 2008).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of U.S. Appl. No. 13/754,361 (Patent Owner Ex. 2009).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of U.S. Appl. No. 13/754,361 (Patent Owner Ex. 2010).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Webster Dictionary p. 2211 (Merriam-Webster, Inc. 1961, 2002) (Ex. 3001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner Preliminary Response to Petition, filed Sep. 5, 2017 (Paper 6).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Decision Institution of Inter Partes Review, filed Dec. 4, 2017 (Paper 7).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Scheduling Order, filed Dec. 4, 2017 (Paper 8).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of Proceeding, filed Jan. 19, 2018 (Paper 9).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Notice of Deposition of R. Lee Rawls, filed Jan. 19, 2018 (Paper 10).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Unopposed Motion for Pro Hac Vice Admission of Tyson Hottinger, filed Feb. 1, 2018 (Paper 11).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List for Patent Owner, filed Feb. 1, 2018 (Paper 12).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Updated Notice of Deposition of R. Lee Rawls, Feb. 1, 2018 (Paper 13).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Granting Motion for Pro Hac Vice Admission, filed Feb. 12, 2018 (Paper 14).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Mandatory Notices, filed Feb. 20, 2018 (Paper 15).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Power of Attorney, filed Feb. 20, 2018 (Paper 16).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owners Motion to Amend, filed Mar. 5, 2018 (Paper 17).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed Mar. 5, 2018 (Paper 18).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of Proceedings, filed Apr. 27, 2018 (Paper 19).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of Proceedings, filed May 7, 2018 (Paper 20).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration of Tyson Hottinger in Support of Motion for Admission Pro Hac Vice, (Patent Owner Ex. 2001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Claim Listing of Proposed Substitute Claims for Patent Owner Motion to Amend, (Patent Owner Ex. 2002).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of U.S. Appl. No. 15/019,088, (Patent Owner Ex. 2003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of U.S. Appl. No. 15/019,088, (Patent Owner Ex. 2004).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of U.S. Appl. No. 14/213,793, (Patent Owner Ex. 2005).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of U.S. Appl. No. 14/213,793, (Patent Owner Ex. 2006).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of U.S. Appl. No. 61/786,007, (Patent Owner Ex. 2007).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of U.S. Appl. No. 61/786,007, (Patent Owner Ex. 2008).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of U.S. Appl. No. 13/754,361, (Patent Owner Ex. 2009).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of U.S. Appl. No. 13/754,361, (Patent Owner Ex. 2010).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Webster Dictionary p. 2211 (Merriam-Webster, Inc. 1961, 2002) (Ex. 3001).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Reply in Support of Petition for Inter Partes Review; filed Jun. 4, 2018; 18 pages (paper 21).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Motion for Pro Hac Vice Admission, filed Jun. 6, 2018; 5 pages (paper 22).

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(56)

References Cited

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Affidavit of Lane M. Polozola in support of Petitioner's Motion of Pro Hac Vice Admission Under 37 C.F.R. 42.10(c), filed Jun. 6, 2018, 4 pages (exhibit 1011).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order granting Motion for Pro Hac Vice Admission—37 C.F.R. 42.10(c), filed Jun. 14, 2018, 4 pages (paper 23).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Mandatory Notices, filed Jun. 20, 2018, 4 pages (paper 24).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Power of Attorney, filed Jun. 20, 2018, 3 pages (paper 25).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Request for Oral Argument, filed Jul. 25, 2018, 4 pages; (paper 26).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Patent Owner's Request for Oral Argument, filed Jul. 25, 2018, 4 pages (paper 27).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order 37 C.F.R. 42.70, filed Aug. 14, 2018, 5 pages (paper 28).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Current Exhibit List of Patent Owner, filed Aug. 24, 2018, 3 pages (paper 29).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order Conduct of Proceedings 37 C.F.R. 42.5, filed Aug. 24, 2018, 4 pages (paper 30).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Exhibit List, filed Aug. 24, 2018, 4 pages (paper 31).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Petitioner's Oral Argument Demonstrative Exhibits, filed Aug. 24, 2018, 31 pages (exhibit 1012).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Patent Owner Demonstrative Exhibits; filed Aug. 24, 2018, 10 pages (exhibit 2003).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Motion for Pro Hac Vice Admission, filed Jun. 6, 2018, 5 pages (paper 21).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Objections to Evidence, filed Jun. 7, 2018, 5 pages (paper 22).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Notice of Deposition of Christopher Cox, filed Jun. 13, 2018, 3 pages (paper 23).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order—Granting Motion for Pro Hac Vice Admission, filed Jun. 14, 2018, 4 pages (paper 24).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Mandatory Notices, filed Jun. 20, 2018, 4 pages, (paper 25).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Power of Attorney, filed Jun. 20, 2018, 3 pages, (paper 26).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Reply to Petitioners Opposition to Motions to Amend, filed Jul. 5, 2018, 28 pages, (paper 27).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List for Patent Owner, filed Jul. 5, 2018, 4 pages, (paper 28).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owners Updated Mandatory Notices, filed Jul. 5, 2018, 4 pages, (paper 29).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Notice of Deposition Scott Ganaja, filed Jul. 11, 2018, 3 pages (paper 30).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Joint Notice of Stipulation to Modify Scheduling Order, filed Jul. 12, 2018, 3 pages, (paper 31).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Objections to Evidence, filed Jul. 12, 2018, 4 pages (paper 32).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Amended Notice of Deposition Scott Ganaja, filed Jul. 12, 2018, 3 pages (paper 33).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of Proceeding 37 C.F.R. 42.5, filed Jul. 20, 2018, 5 pages, (paper 34).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Sur-Reply ISO Opposition to Motions to Amend, filed Aug. 1, 2018, 19 pages, (paper 35).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Joint Notice of Stipulation to Modify Scheduling Order, filed Aug. 3, 2018, 3 pages (paper 36).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of the Proceeding, filed Aug. 7, 2018, 4 pages (paper 37).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Objections to Petitioners Sur Reply, filed Aug. 8, 2018, 5 pages (paper 38).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Request for Oral Argument, filed Aug. 10, 2018, 4 pages, (paper 39).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Request for Oral Argument, filed Aug. 10, 2018, 4 pages, (paper 40).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Motion to Exclude Evidence, filed Aug. 10, 2018, 11 pages (paper 41).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order 37 C.F.R. 42.70, filed Aug. 14, 2018, 5 pages (paper 42).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Opposition to Patent Owner's Motion to Exclude, filed Aug. 16, 2018, 18 pages (paper 44).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Reply in support of Motion to Exclude, filed Aug. 22, 2018, 8 pages, (paper 45).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List of Patent Owner, filed Aug. 24, 2018, 4 pages (paper 46).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order re PO Sur-Rebuttal at Hearing, filed Aug. 24, 2018, 4 pages (paper 47).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1012—U.S. Pat. No. 8,585,561 (Watt), filed Jun. 4, 2018, 32 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1013—U.S. Pat. No. 9,044,635 (Lull), filed Jun. 4, 2018, 21 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1014—U.S. Pat. No. 7,740,563 (Dalebout), filed Jun. 4, 2018, 31 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1015—US20020055418A1 (Pyles), filed Jun. 4, 2018, 9 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1016—US20120258433A1 (Hope), filed Jun. 4, 2018, 51 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1017—U.S. Pat. No. 7,771,320 (Riley), filed Jun. 4, 2018, 44 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1018—Declaration of Christopher Cox in Support of Petitioners Oppositions to Patent Owners Motions to Amend, filed Jun. 4, 2018, 739 pages.

US 10,967,214 B1

Page 11

(56) **References Cited**

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1019—Affidavit of Lane M. Polozola in Support of Petitioners Motion for Pro Hac Vice Admission, filed Jun. 6, 2018, 4 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1020—S. Ganaja Depo Transcript, filed Aug. 1, 2018, 58 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1021—Petitioner's Demonstrative Exhibits, filed Aug. 24, 2018, 92 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2011—Declaration of Scott Ganaja in Support of Patent Owner's Reply to Petitioners Opposition to Patent Owners Motion to Amend, filed Jul. 5, 2018, 42 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2012—Declaration of Richard Ferraro in Support of Patent Owner's Reply to Petitioners Opposition to Patent Owners Motion to Amend, filed Jul. 5, 2018, 35 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2013—Cox, Christopher Depo Transcript 2018 06 26, filed Jul. 5, 2018, 26 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2014—Patent Owner Demonstrative Exhibits, filed Aug. 24, 2018, 21 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Opposition to Patent Owner's Motion to Amend, filed Jun. 4, 2018, 44 pages (paper 21).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioners Motion for Pro Hac Vice Admission, filed Jun. 6, 2018, 5 pages (paper 22).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Objections to Evidence, filed Jun. 7, 2018, 5 pages (paper 23).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration R. Lee Rawls, Part 1, dated May 12, 2017, 447 pages, (paper 24).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration R. Lee Rawls, Part 2, dated May 12, 2017, 216 pages, (paper 24).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order granting Motion for Pro Hac Vice Admission, filed Jun. 14, 2018, 4 pages (paper 25).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Mandatory Notices, filed Jun. 20, 2018, 4 pages, (paper 26).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Power of Attorney, filed Jun. 20, 2018, 3 pages, (paper 27).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Reply to Opposition to Motions to Amend, filed Jul. 5, 2018, 28 pages, (paper 28).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed Jul. 5, 2018, 4 pages, (paper 29).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Updated Mandatory Notices, filed Jul. 5, 2018, 4 pages, (paper 30).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Notice of Deposition of Scott Ganaja, filed Jul. 11, 2018, 3 pages (paper 31).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Joint Notice of Stipulation to Modify Scheduling Order, filed Jul. 12, 2018, 3 pages (paper 32).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Objections to Patent Owner's Evidence, filed Jul. 12, 2018, 4 pages, (paper 33).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Amended Notice of Deposition of Scott Ganaja, filed Jul. 12, 2018, 3 pages, (paper 34).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order—Conduct of the Proceeding, 37 C.F.R. 42.5, filed Jul. 20, 2018, 5 pages (paper 35).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Sur-Reply in Support of Opposition to Patent Owners Motions to Amend, filed Aug. 1, 2018, 19 pages, (paper 36).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Joint Notice of Stipulation to Modify Scheduling Order, filed Aug. 3, 2018, 3 pages (paper 37).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order—Conduct of the Proceeding, 37 C.F.R. 42.5, filed Aug. 7, 2018, 4 pages (paper 38).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Objections to Petitioners Sur Reply, filed Aug. 2, 2018, 5 pages, (paper 39).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Request for Oral Argument, filed Aug. 10, 2018, 4 pages, (paper 40).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Request for Oral Argument, filed Aug. 10, 2018, 4 pages, (paper 41).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Motion to Exclude Evidence, filed Aug. 10, 2018, 11 pages (paper 42).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order—Oral Hearing 37 C.F.R. 42.70, filed Aug. 14, 2018, 5 pages (paper 43).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Opposition to Patent Owner's Motion to Exclude Evidence, filed Aug. 16, 2018, 18 pages (paper 44).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owners Reply in Support of its Motion to Exclude, filed Aug. 22, 2018, 8 pages, (paper 46).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed Aug. 24, 2018, 4 pages (paper 47).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of the Proceedings—37 C.F.R. 42.5, filed Aug. 24, 2018, 4 pages, (paper 48).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Exhibit List, filed Aug. 24, 2018, 5 pages, (paper 49).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1012—U.S. Pat. No. 8,585,561 (Watt), filed Jun. 4, 2018, 32 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1013—U.S. Pat. No. 9,044,635 (Lull), filed Jun. 4, 2018, 21 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1014—U.S. Pat. No. 7,740,563 (Dalebout), filed Jun. 4, 2018, 31 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1015—US20020055418A1 (Pyles), filed Jun. 4, 2018, 9 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1016—US20120258433A1 (Hope), filed Jun. 4, 2018, 51 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1017—U.S. Pat. No. 7,771,320 (Riley), filed Jun. 4, 2018, 44 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1018—Declaration of Christopher Cox in Support of Petitioners Oppositions to Patent Owners Motions to Amend, filed Jun. 4, 2018, 739 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1019—Affidavit of Lane M. Polozola in Support of Petitioners Motion for Pro Hac Vice Admission, filed Jun. 6, 2018, 4 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1020—Scott Ganaja Depo Transcript, filed Aug. 1, 2018, 58 pages.

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(56)

References Cited

OTHER PUBLICATIONS

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1021—Petitioner’s Demonstrative Exhibits, filed Aug. 24, 2018, 92 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2011—Declaration of Scott Ganaja in Support of Patent Owner’s Reply to Petitioner’s Opposition to Patent Owner’s Motion to Amend, filed Jul. 5, 2018, 42 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2012—Declaration of Richard Ferraro in Support of Patent Owner’s Reply to Petitioner’s Opposition to Patent Owner’s Motion to Amend, filed Jul. 5, 2018, 35 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2013—Cox, Christopher Depo Transcript 2018 06 26, filed Jul. 5, 2018, 26 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2014—Patent Owner’s Demonstrative Exhibits, filed Aug. 24, 2018, 21 pages.

European Patent Office, Article 94(3) EPC Communication dated Jul. 10, 2018, issued in European Patent Application No. 14768130.8-1126, 3 pages.

United States Patent and Trademark Office; International Search Report and Written Opinion issued in application No. PCT/US2015/034665; dated Oct. 8, 2015 (14 pages).

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No.’s. IPR2017-01363, IPR2017-01407, and IPR2017-01408 Record of Oral Hearing held Aug. 29, 2018; (paper 32) 104 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407—Petitioner’s Updated Exhibit List, filed Aug. 24, 2018, (paper 48) 5 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Final Written Decision dated Nov. 28, 2018; (paper 33) 29 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No.’s. IPR2017-01407, Final Written Decision dated Dec. 3, 2018; (paper 50) 81 pages.

Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No.’s. IPR2017-01408, Final Written Decision dated Dec. 3, 2018; (paper 51) 82 pages.

U.S. Appl. No. 16/572,272, filed Sep. 16, 2019, titled “Cable Exercise Machine”, (35 pages).

U.S. Appl. No. 62/310,467, filed Mar. 18, 2016, titled “Collapsible Strength Exercise Machine”, 31 pages.

U.S. Appl. No. 62/429,977, filed Dec. 5, 2016, titled “Pull Cable Resistance Mechanism in a Treadmill”, 37 pages.

U.S. Appl. No. 62/429,970, filed Dec. 5, 2016, titled “Tread Belt Locking Mechanism”, 37 pages.

International Bureau of WIPO; International Preliminary Report on Patentability; Int’l App No. PCT/US2017/064523 dated Jun. 11, 2019; 7 pages.

International Bureau of WIPO; International Preliminary Report on Patentability; Int’l App No. PCT/US2017/064536 dated Jun. 11, 2019; 8 pages.

Chinese Second Office Action for Chinese Patent Application No. 201480003701.9 dated Nov. 21, 2016.

Chinese Third Office Action for Chinese Patent Application No. 201480003701.9 dated Nov. 24, 2017.

Chinese Office Action for Chinese Patent Application No. 201580033332 dated Feb. 28, 2018.

Chinese Second Office Action for Chinese Patent Application No. 201580033332 dated Nov. 15, 2018.

Nordic Track Fusion CST Series; website; located at: <http://www/nordictrack.com/fusion-cst-series>; accessed on Jan. 24, 2018; 11 pages.

U.S. Appl. No. 62/804,146, filed Feb. 11, 2019, titled Cable and Power Rack Exercise Machine, 49 pages.

U.S. Appl. No. 16/780,765, filed Feb. 3, 2020, titled Cable and Power Rack Exercise Machine, 48 pages.

U.S. Appl. No. 16/787,850, filed Feb. 11, 2020, titled “Exercise Machine”, 40 pages.

International Patent Application No. PCT/US20/17710, filed Feb. 11, 2020, titled “Exercise Machine”, 41 pages.

First Office Action and Search Report with English translation issued in Taiwan application 106135830 dated Jun. 15, 2018.

U.S. Appl. No. 16/742,762, filed Jan. 14, 2020, titled Controlling an Exercise Machine Using a Video Workout Program, 146 pages.

U.S. Appl. No. 16/750,925, filed Jan. 2, 2020, titled Systems and Methods for an Interactive Pedaled Exercise Device, 54 pages.

U.S. Appl. No. 62/914,007, filed Oct. 11, 2019, titled Modular Exercise Device, 128 pages.

U.S. Appl. No. 62/934,291, filed Nov. 12, 2019, titled Exercise Storage System, 41 pages.

U.S. Appl. No. 62/934,297, filed Nov. 12, 2019, titled Exercise Storage System, 44 pages.

Extended European Search Report for European Application No. 17879180.2, dated Jun. 9, 2020, 8 pages.

Chinese First Office Action for Application No. 201780074846.1 dated May 9, 2020.

International Search Report and Written Opinion dated Aug. 20, 2020 issued in International Application No. PCT/US20/17710, 10 pages.

U.S. Appl. No. 29/568,648, filed Jun. 20, 2016, ICON Health & Fitness, Inc.

U.S. Appl. No. 29/702,127, filed Sep. 16, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 13/088,007, filed Apr. 15, 2011, Scott R. Watterson.

U.S. Appl. No. 15/821,386, filed Nov. 22, 2017, ICON Health & Fitness, Inc.

U.S. Appl. No. 15/973,176, filed May 7, 2018, Melanie Douglass.

U.S. Appl. No. 16/378,022, filed Apr. 8, 2019, William T. Dalebout.

U.S. Appl. No. 16/435,104, filed Jun. 7, 2019, Dale Alan Buchanan.

U.S. Appl. No. 16/506,085, filed Jul. 9, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/697,833, filed Jul. 13, 2018, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/796,952, filed Jan. 25, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/804,146, filed Feb. 11, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/804,685, filed Feb. 12, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/852,118, filed May 22, 2019, David Hays.

U.S. Appl. No. 62/866,576, filed Jun. 25, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/887,391, filed Aug. 15, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/887,398, filed Aug. 15, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/897,113, filed Sep. 9, 2019, ICON Health & Fitness, Inc.

U.S. Appl. No. 62/842,118, filed May 23, 2019, ICON Health & Fitness, Inc.

English Translation of Search Report for Taiwan Patent Application No. 104131458 dated Jun. 3, 2016.

English Translation of Search Report for Taiwan Patent Application No. 105126694 dated Oct. 3, 2017.

International Search Report and Written Opinion issued in PCT/US2016/048692 dated Dec. 1, 2016.

International Search Report and Written Opinion issued in PCT/US2017/023002 dated Jun. 28, 2017.

International Search Report and Written Opinion issued in PCT/US2017/022989 dated May 23, 2017.

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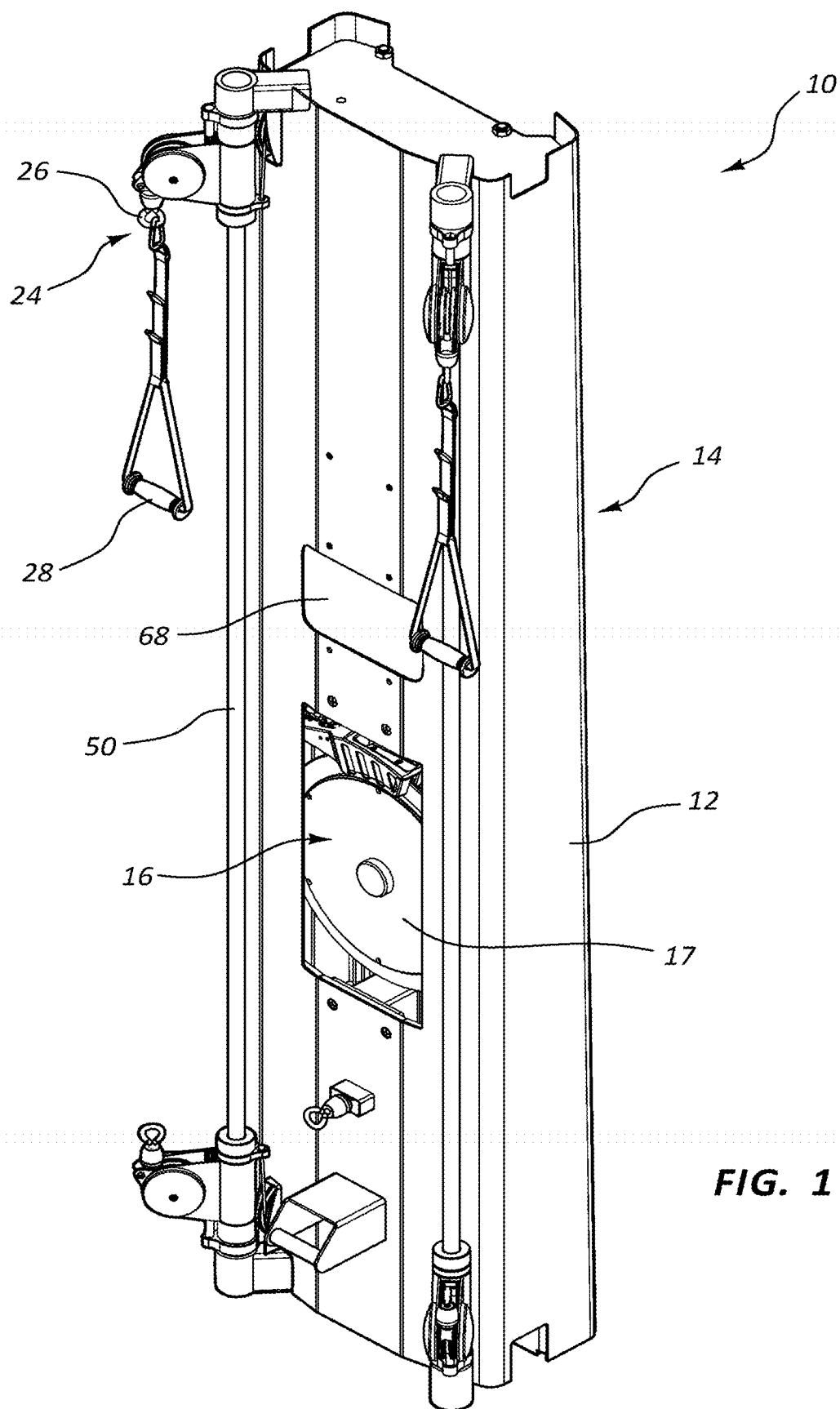


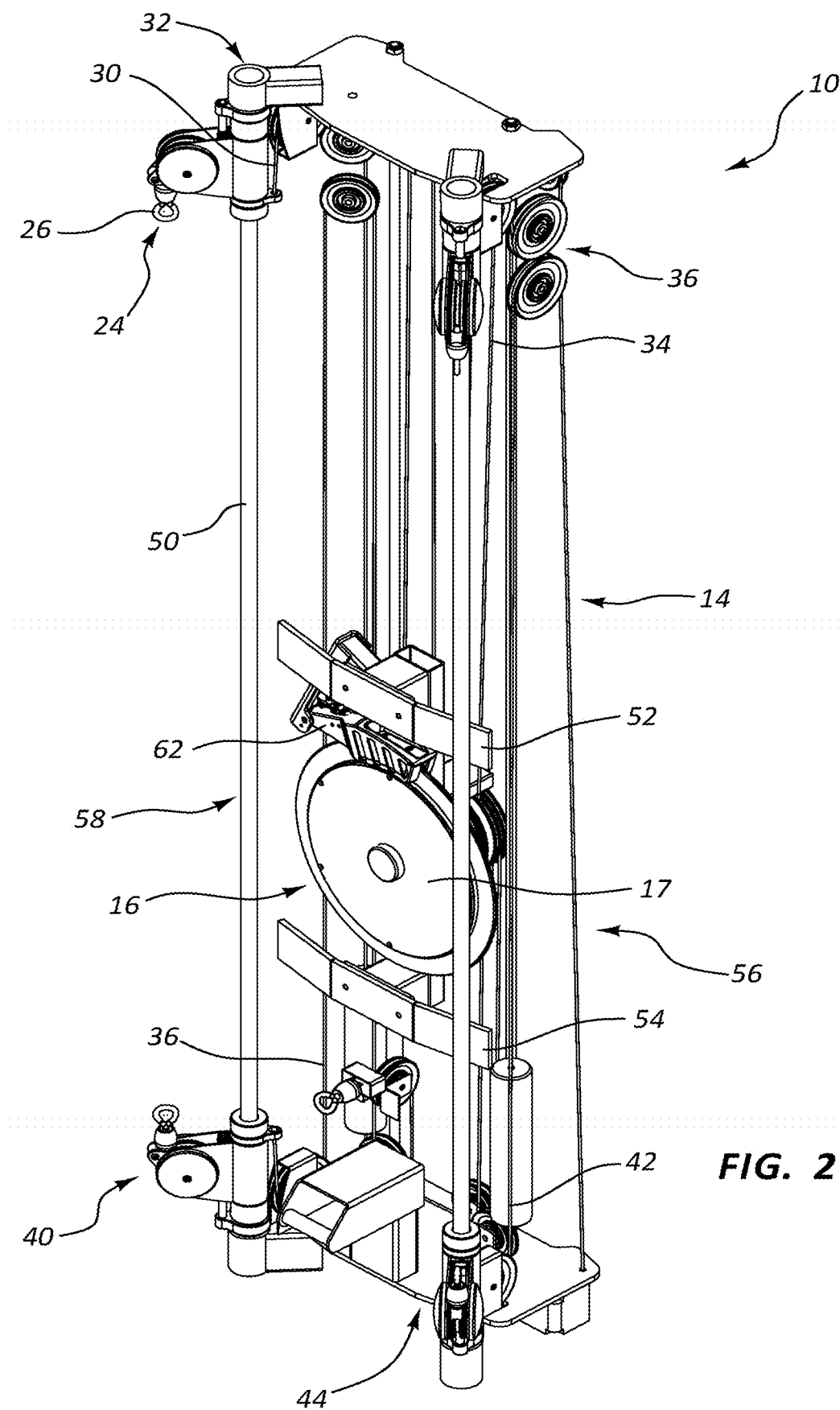
FIG. 1

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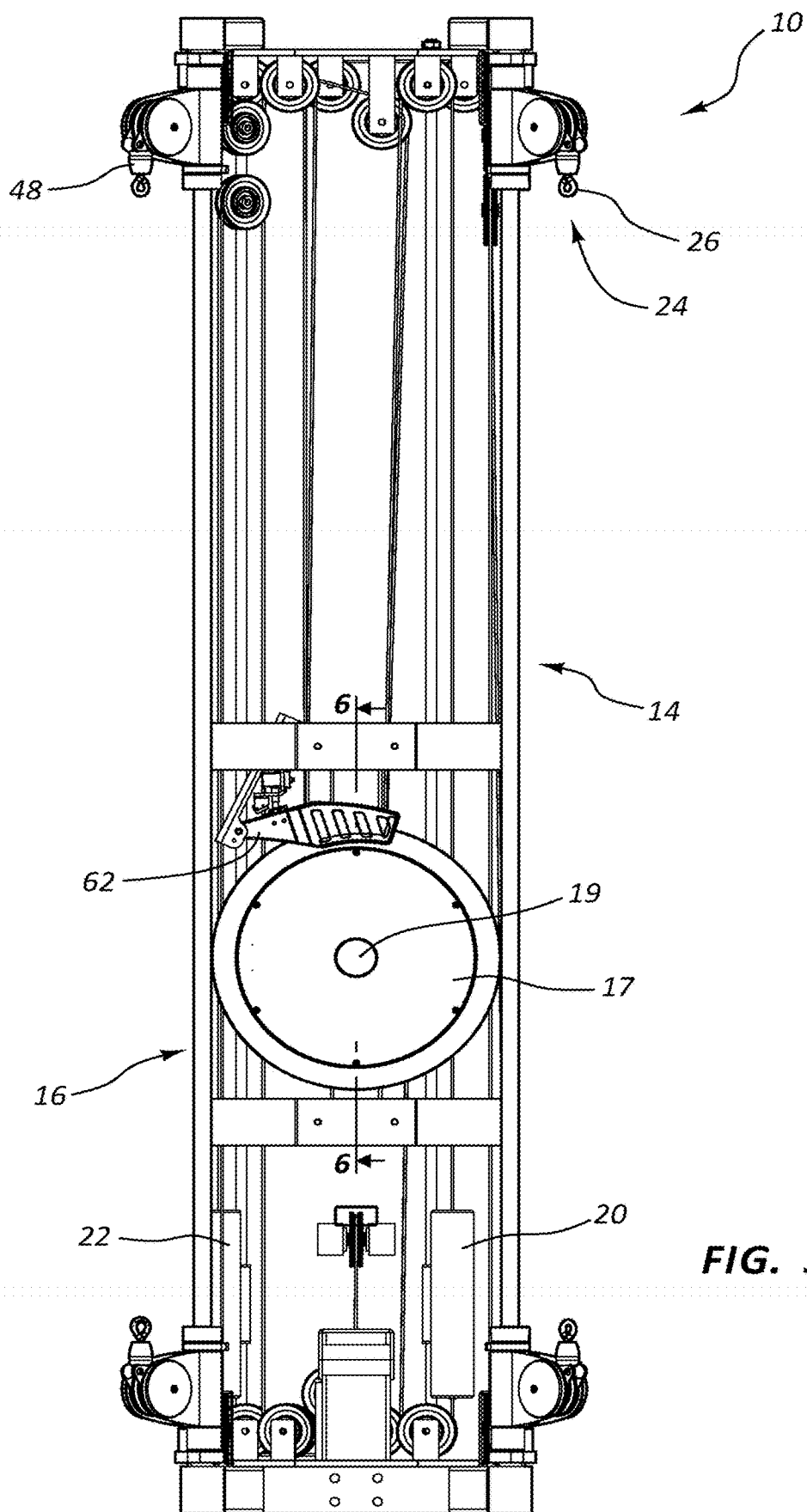


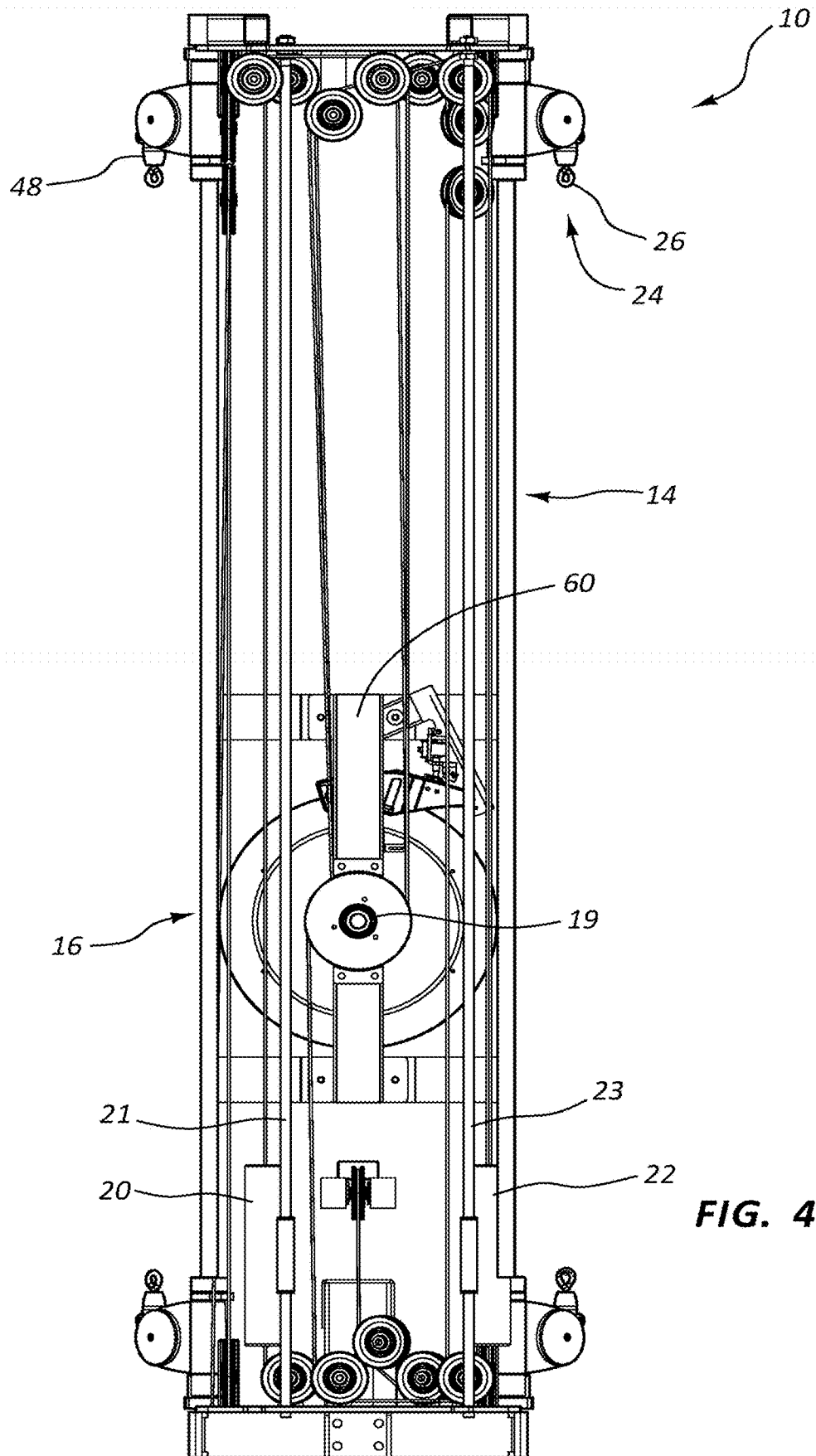
FIG. 3

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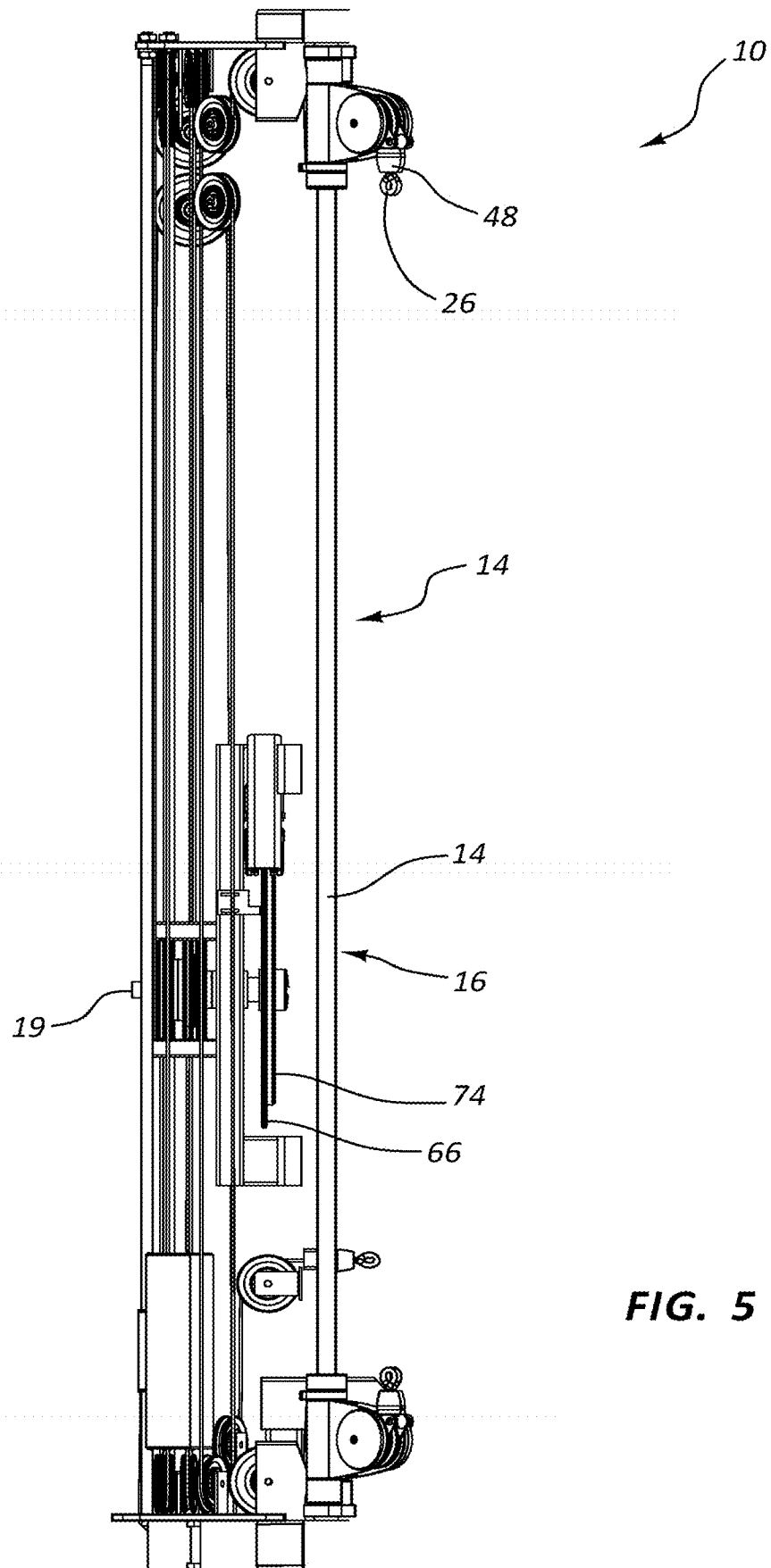


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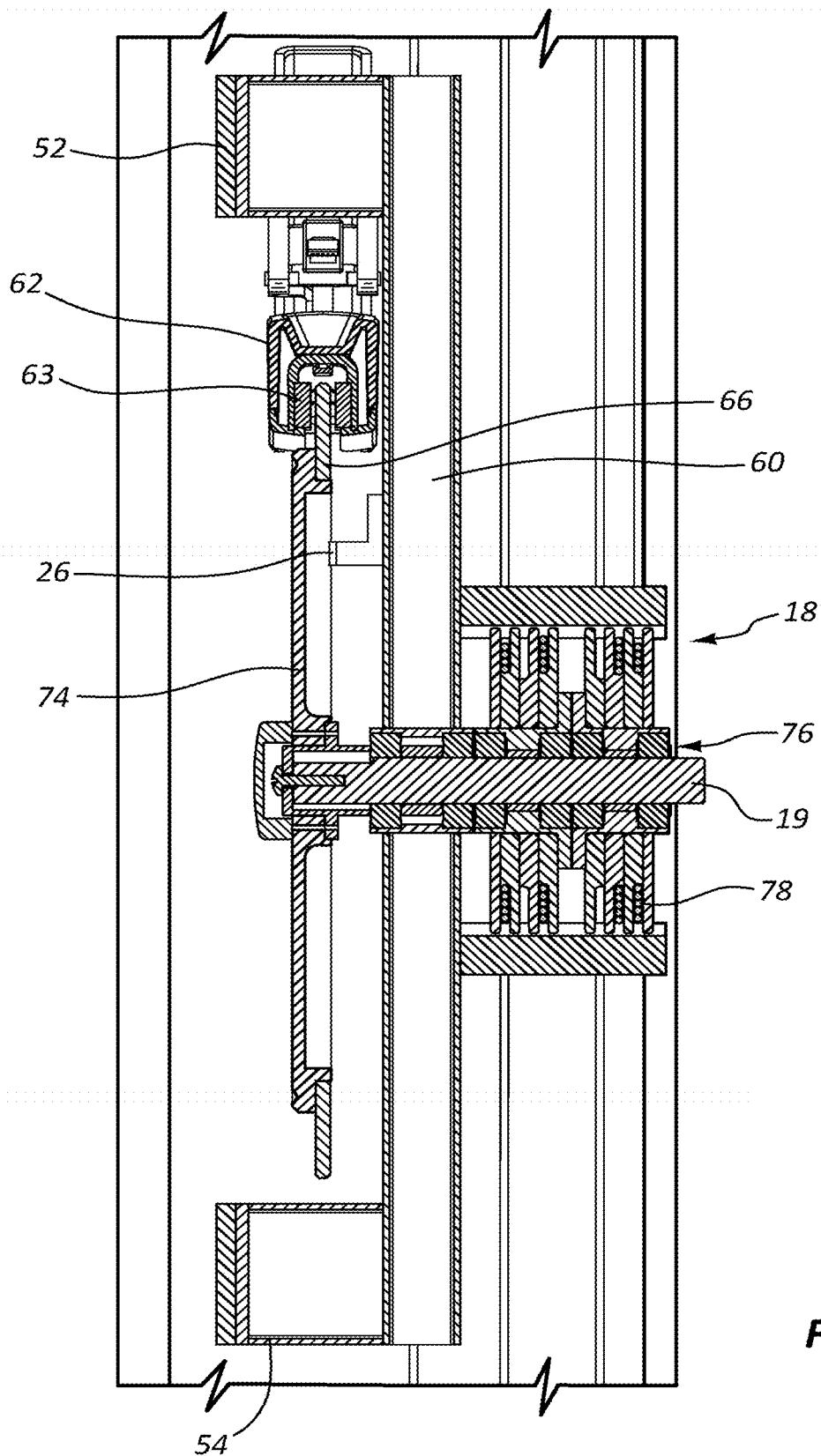


FIG. 6

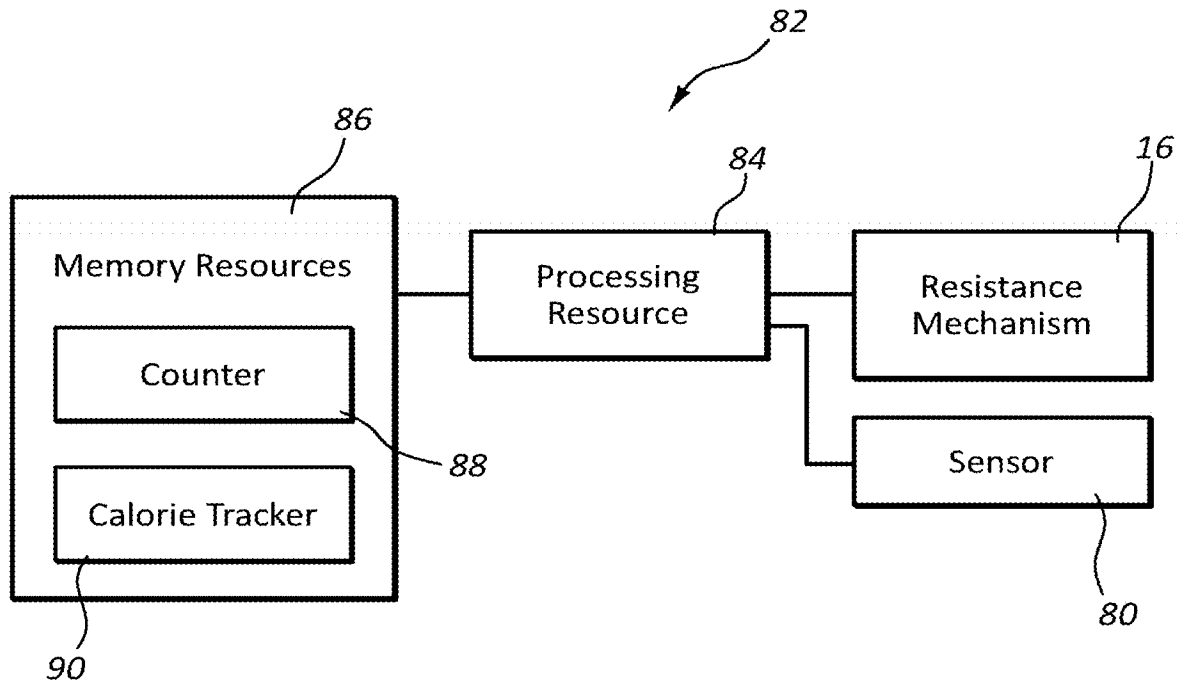


FIG. 7

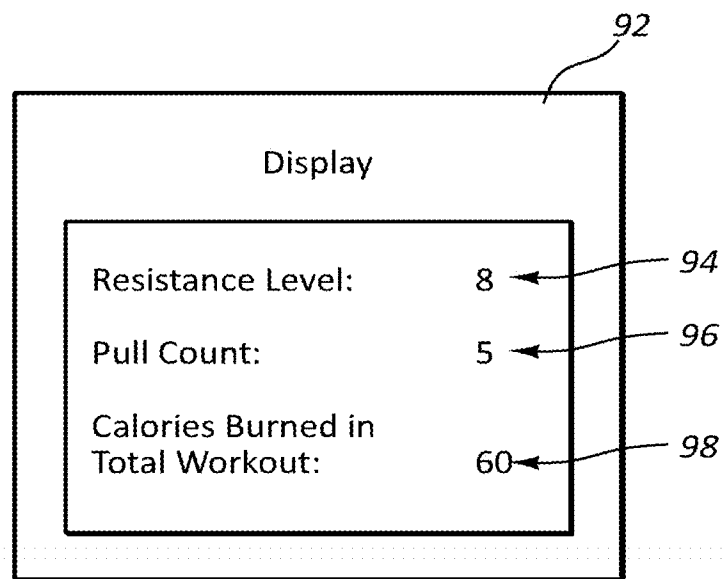


FIG. 8

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CABLE EXERCISE MACHINE**RELATED APPLICATIONS**

This application is a continuation of U.S. patent application Ser. No. 17/008,148 filed Aug. 31, 2020, which is a continuation of U.S. patent application Ser. No. 16/258,356 filed Jan. 25, 2019, now U.S. Pat. No. 10,758,767, which is a continuation of U.S. patent application Ser. No. 15/976,496 filed May 10, 2018, now U.S. Pat. No. 10,188,890, which is a continuation of U.S. patent application Ser. No. 15/696,841 filed Sep. 6, 2017, now U.S. Pat. No. 9,968,816, which is a continuation of U.S. patent application Ser. No. 15/226,703 filed Aug. 2, 2016, now U.S. Pat. No. 9,757,605, which is a continuation of U.S. patent application Ser. No. 14/582,493 filed Dec. 24, 2014, now U.S. Pat. No. 9,403,047, which claims priority to provisional Patent Application No. 61/920,834 filed Dec. 26, 2013. Each of these applications is herein incorporated by reference in its entirety.

BACKGROUND

While there are numerous exercise activities that one may participate in, exercise may be broadly classified into categories of aerobic exercise and anaerobic exercise. Aerobic exercise generally refers to activities that substantially increase the heart rate and respiration of the exerciser for an extended period of time. This type of exercise is generally directed to enhancing cardiovascular performance. Such exercise usually includes low or moderate resistance to the movement of the individual. For example, aerobic exercise includes activities such as walking, running, jogging, swimming, or bicycling for extended distances and extended periods of time.

Anaerobic exercise generally refers to exercise that strengthens skeletal muscles and usually involves the flexing or contraction of targeted muscles through significant exertion during a relatively short period of time and/or through a relatively small number of repetitions. For example, anaerobic exercise includes activities such as weight training, push-ups, sit-ups, pull-ups, or a series of short sprints.

To build skeletal muscle, a muscle group is contracted against resistance. The contraction of some muscle groups produces a pushing motion, while the contraction of other muscle groups produces a pulling motion. A cable machine is a popular piece of exercise equipment for building those muscle groups that produce pulling motions. A cable machine often includes a cable with a handle connected to a first end and a resistance mechanism connected to a second end. Generally, the resistance mechanism is connected to a selectable set of weights. A midsection of the cable is supported with at least one pulley. To move the cable, a user pulls on the handle with a force sufficient to overcome the force of the resistance mechanism. As the cable moves, the pulley or pulleys direct the movement of the cable and carry a portion of the resistance mechanism's load.

One type of cable exercise machine is disclosed in WIPO Patent Publication No. WO/2007/015096 issued to Andrew Loach. In this reference, an exercise apparatus allows the user to perform a variety of aerobic and strength training exercises. A user input means allows the user to apply torque to an input shaft of a resistance unit. A control means adjusts the resistance provided by a resistance means coupled to the input shaft according to the output of a number of sensors. In a preferred embodiment, the resistance unit is able to simulate at the input shaft the dynamic response of a damped flywheel or the dynamic response of an object driven

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through a viscous medium, or to maintain the resistance at a constant level that is set by the user. The resistance unit includes a battery or an electric generator device and can be operated without connection to an external power source. Other types of cable exercise machines are described in U.S. Patent Publication Nos. 2012/0065034 issued to Andrew Loach and 2006/0148622 issued to Ping Chen. All of these references are herein incorporated by reference for all that they disclose.

SUMMARY

In one aspect of the invention, a cable exercise machine includes a first vertical guide, a first pull cable routed through a first pulley, a second vertical guide, a second pull cable routed through a second pulley, and an electronic control panel. The first pulley is movable along a length of the first vertical guide, and the second pulley is movable along a length of the second vertical guide. The electronic control panel is configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable, electronically allow for adjustment of the level of resistance to the user pulling on the first pull cable and/or the second pull cable, and electronically present the adjusted level of resistance to the user.

In one aspect of the invention, a cable exercise machine includes a first pull cable and a second pull cable incorporated into a frame.

In one aspect of the invention, the cable exercise machine may further include that each of the first pull cable and the second pull cable are linked to at least one resistance mechanism.

In one aspect of the invention, the at least one resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel.

In one aspect of the invention, the cable exercise machine may further include a sensor arranged to collect information about a position of the flywheel.

In one aspect of the invention, the cable exercise machine may further include a counter in communication with the sensor and arranged to track a number of rotations of the flywheel.

In one aspect of the invention, the counter is arranged to provide the number as input to an energy tracker.

In one aspect of the invention, the energy tracker is arranged to receive as input a level of magnetic resistance exerted on the flywheel with the magnetic unit.

In one aspect of the invention, the frame is a tower.

In one aspect of the invention, the cable exercise machine may further include that a third pull cable and a fourth pull cable are also incorporated into the tower.

In one aspect of the invention, the cable exercise machine may further include that a first handle end of the first pull cable is routed to an upper right location of the tower.

In one aspect of the invention, the cable exercise machine may further include that a second handle end of the second pull cable is routed to an upper left location of the tower.

In one aspect of the invention, the cable exercise machine may further include that a third handle end of the third pull cable is routed to a lower right location of the tower.

In one aspect of the invention, the cable exercise machine may further include that a fourth handle end of the fourth pull cable is routed to a lower left location of the tower.

In one aspect of the invention, the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location.

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In one aspect of the invention, the cable exercise machine may further include at least two of the first pull cable, the second pull cable, the third pull cable and the fourth pull cable are connected to the same resistance mechanism.

In one aspect of the invention, the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

In one aspect of the invention, the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable.

In one aspect of the invention, the flywheel is arranged to rotate in just a single direction while at least one of the multiple spools are arranged to rotate in the single direction and an opposite direction.

In one aspect of the invention, the spools are linked to at least one counterweight.

In one aspect of the invention, an cable exercise machine may include a first pull cable, a second pull cable, a third pull cable, and a fourth pull cable incorporated into a tower.

In one aspect of the invention, the cable exercise machine may further include that a first handle end of the first pull cable is routed to an upper right location of the tower, a second handle end of the second pull cable is routed to an upper left location of the tower, a third handle end of the third pull cable is routed to a lower right location of the tower, and a fourth handle end of the fourth pull cable is routed to a lower left location of the tower.

In one aspect of the invention, each of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable are connected to a resistance mechanism.

In one aspect of the invention, the resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel.

In one aspect of the invention, the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location.

In one aspect of the invention, the cable exercise machine may further include a sensor arranged to collect information about a position of the flywheel.

In one aspect of the invention, the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

In one aspect of the invention, the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable.

In one aspect of the invention, the flywheel is arranged to rotate in only a single direction while at least one of the multiple spools is arranged to rotate in the single direction and an opposite direction.

In one aspect of the invention, the spools are linked to at least one counterweight.

In one aspect of the invention, the cable exercise machine may further include a counter in communication with the sensor and arranged to track a number of rotations of the flywheel.

In one aspect of the invention, the counter is arranged to provide the number as input to an energy tracker.

In one aspect of the invention, a cable exercise machine may include a first pull cable, a second pull cable, a third pull cable, and a fourth pull cable incorporated into a tower.

In one aspect of the invention, the cable exercise machine may further include that a first handle end of the first pull cable is routed to an upper right location of the tower, a second handle end of the second pull cable is routed to an upper left location of the tower, a third handle end of the third pull cable is routed to a lower right location of the

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tower, and a fourth handle end of the fourth pull cable is routed to a lower left location of the tower.

In one aspect of the invention, each of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable are connected to a resistance mechanism.

In one aspect of the invention, the resistance mechanism comprises a flywheel and a magnetic unit arranged to resist movement of the flywheel.

In one aspect of the invention, the flywheel is positioned between the upper right location, the upper left location, the lower right location, and the lower left location.

In one aspect of the invention, the flywheel is attached to a central shaft about which the flywheel is arranged to rotate and the central shaft supports multiple cable spools.

In one aspect of the invention, the multiple cable spools are attached to at least one of the first pull cable, the second pull cable, the third pull cable, and the fourth pull cable.

In one aspect of the invention, the flywheel is arranged to rotate in only a single direction while at least one of the multiple spools is arranged to rotate in the single direction and an opposite direction.

In one aspect of the invention, the spools are linked to at least one counterweight.

In one aspect of the invention, the cable exercise machine may further include a sensor is arranged to collect information about a position of the flywheel.

In one aspect of the invention, the cable exercise machine may further include a counter is in communication with the sensor and arranged to track a number of rotations of the flywheel.

In one aspect of the invention, the counter is arranged to provide the number as input to an energy tracker.

In one aspect of the invention, the energy tracker is arranged to receive as input a level of magnetic resistance exerted on the flywheel with the magnetic unit.

Any of the aspects of the invention detailed above may be combined with any other aspect of the invention detailed herein.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings illustrate various embodiments of the present apparatus and are a part of the specification. The illustrated embodiments are merely examples of the present apparatus and do not limit the scope thereof.

FIG. 1 illustrates a front perspective view of an example of a cable exercise machine in accordance with the present disclosure.

FIG. 2 illustrates a front perspective view of the cable exercise machine of FIG. 1 with an outside cover removed.

FIG. 3 illustrates a front view of the cable exercise machine of FIG. 1 with an outside cover removed.

FIG. 4 illustrates a back view of the cable exercise machine of FIG. 1 with an outside cover removed.

FIG. 5 illustrates a side view of the cable exercise machine of FIG. 1 with an outside cover removed.

FIG. 6 illustrates a cross sectional view of a resistance mechanism of the cable exercise machine of FIG. 1.

FIG. 7 illustrates a perspective view of an example of a tracking system of a cable exercise machine in accordance with the present disclosure.

FIG. 8 illustrates a block diagram of an example of a display of a cable exercise machine in accordance with the present disclosure.

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Throughout the drawings, identical reference numbers designate similar, but not necessarily identical, elements.

DETAILED DESCRIPTION

Those who exercise often desire to know the amount of calories that they burn during their workouts. This information allows them to track their progress and achieve health related goals. Calories are burned during anaerobic exercises, such as those types of exercises that are performed on a cable exercise machine. The amount of calories that are burned using a cable exercise machine depends on the number of repetitions that the cable is pulled, the distance that the cable is moved during each pull, and the amount of resistance associated with each pull.

Generally, cable exercise machines provide resistance to the movement of the cable with a set of weighted plates. Often, these weighted plates are arranged in a stack with an ability to selectively connect a subset of the weighted plates to an attachment of the cable. This can be done by inserting a removable pin within a plate slot of at least one of the weighted plates such that the pin is also inserted into an attachment slot of the cable. With this arrangement, when the user pulls the cable, the weighted plate will move with the cable. Also, any plates stacked over the moving plate will move with the cable as well. However, this type of cable exercise machine does not include a mechanism that assists the user in tracking the amount of calories burned during the workout.

The principles described in the present disclosure include a cable exercise machine that incorporates a sensor that tracks the position of a flywheel. The flywheel is incorporated into a magnetic resistance mechanism that applies a load of resistance to the movement of the pull cable. As the flywheel rotates, the sensor tracks the rotation of the flywheel. In some embodiments, the sensor causes a counter to be incremented up one for each rotation of the flywheel. In other embodiments, the sensor can track partial revolutions of the flywheel.

The level of resistance applied by the magnetic resistance mechanism can be controlled electronically. For example, an electrical input into an electromagnetic unit can produce an output of resistance that can resist the movement of the cable. In other examples, an adjustable distance between a magnetic unit and the flywheel can also change the amount of resistance that is applied to the movement of the cable. The inputs or outputs of these and other types of adjustable resistance mechanisms can be tracked and stored.

The tracked level of resistance can be sent to an energy tracker. Also, the sensor that tracks the position of the flywheel can also send position information to the energy tracker as an input. The energy tracker can determine the amount of calories (or other energy units) burned during each pull and/or collectively during the course of the entire workout based on the inputs about the flywheel position and the resistance level.

The principles described herein also include a unique example of a flywheel arrangement where a single flywheel is arranged to resist the movement of four different resistance cables. In some examples, the flywheel is attached to a central shaft with multiple spools coaxially mounted around the central shaft. The spools can contain attachments to at least one of the cables. As one of the pull cables is moved in a first direction, the spools are rotated in a first direction. The torque generated by rotating the spools is transferred to the flywheel, and the flywheel will rotate in the first direction with the spools. However, when the pull cable

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is returned, the force that caused the spools to rotate in the first direction ceases. At least one counterweight is connected to the flywheel through a counterweight cable. In the absence of the force imposed on the pull cable, the counterweights cause the spools to rotate back in the opposite direction to their original orientation before the pull cable force was imposed. However, the arrangement between the flywheel, shaft, and spools does not transfer the torque generated in the second direction to the flywheel. As a result, the orientation of the flywheel does not change as the counterweights pull the spools back. As the spools return to their original orientation in the opposite direction, the pull cables are rewound around the spools, which returns the handles connected to the pull cable back to their original locations as well.

Thus, in this example, the flywheel rotates in a single direction regardless of the direction that the pull cable is moving. Further, in this example, the flywheel is just rotating when a pull force is exerted by the user. Thus, the position of the flywheel represents just work done as part of the workout. In other words, the return movement of the cable does not affect the calorie count. Further, the calorie counting calculations of the cable exercise machine are simplified because the sensor is insulated from at least the return forces that may skew the calorie counting calculations. Consequently, the tracked calories represent just those calories that are consumed during the course of the workout.

With reference to this specification, terms such as “upper,” “lower,” and similar terms that are used with reference to components of the cable exercise machine are intended to describe relative relationships between the components being described. Such terms generally depict the relationship between such components when the cable exercise machine is standing in the intended upright position for proper use. For example, the term “lower” may refer to those components of the cable exercise machine that are located relatively closer to the base of the cable exercise machine than another component when the cable exercise machine is in the upright position. Likewise, the term “upper” may refer to those components of the cable exercise machine that are located relatively farther away from the base of the cable exercise machine when in the upright position. Such components that are described with “upper,” “lower,” or similar terms do not lose their relative relationships just because the cable exercise machine is temporarily on one of its sides for shipping, storage, or during manufacturing.

Particularly, with reference to the figures, FIGS. 1-5 depict a cable exercise machine 10. FIG. 1 depicts the cable exercise machine 10 with an outer covering 12 about a tower 14 that supports the cables while FIGS. 2-5 depict different views of the cable exercise machine 10 without the outer covering 12. In the example of FIGS. 1-5, a resistance mechanism, such as a flywheel assembly 16, is positioned in the middle of the tower 14. The flywheel assembly 16 includes a flywheel 17, a spool subassembly 18, and a central shaft 19. The flywheel assembly 16 is connected to multiple cables through a spool subassembly 18. The cables are routed through multiple locations within the tower 14 with an arrangement of pulleys that direct the movement of the cables, a first counterweight 20, a second counterweight 22, and the flywheel assembly 16. The first and second counterweights 20, 22 are attached to a first counterweight guide 21 and a second counterweight guide 23 respectively. These guides 21, 23 guide the movement of the counterweights 20, 22 as they move with the rotation of the spool subassembly 18.

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At least some of the cables have a handle end **24** that is equipped with a handle connector **26** that is configured to secure a handle **28** for use in pulling the cables. The pulleys route the handle ends **24** of a first cable **30** to an upper right location **32** of the tower **14**, a second cable **34** to an upper left location **36** of the tower **14**, a third cable **38** to a lower right location **40** of the tower **14**, and a fourth cable **42** to a lower left location **44** of the tower **14**. Each of these cables **30, 34, 38, 42** may be pulled to rotate the flywheel **17**.

The handle connectors **26** may be any appropriate type of connector for connecting a handle **28** to a cable. In some examples, at least one of the handle connectors **26** includes a loop to which a handle **28** can be connected. Such a loop may be made of a metal, rope, strap, another type of material, or combinations thereof. In some examples, the loop is spring loaded. In yet other examples, a loop is formed out of the cable material which serves as the handle **28**. The handle **28** may be a replaceable handle so that the user can change the type of grip or move the handle **28** to a different handle connector **26**.

The user can pull any combination of the cables **30, 34, 38, 42** as desired. For example, the user may use the first and second cables **30, 34** as a pair for exercises that involve muscle groups that produce downward motions. In other examples, the user may use the third and fourth cables **38, 42** as a pair for exercises that involve muscle groups that produce upwards motions. Further, the user may use the first and third cables **30, 38** as a pair. Likewise, the user may use the second and fourth cables **34, 42** as a pair. In general, the user may combine any two of the cables to use as a pair to execute a workout as desired. Also, the user may use just a single cable as desired to execute a workout.

In some embodiments, a stopper **48** is attached to the handle ends **24** of the cables **30, 34, 38, 42**. The stopper **48** can include a large enough cross sectional thickness to stop the handle end **24** from being pulled into a pulley, an opening in the outer covering, or another feature of the cable exercise machine **10** that directs the movement of the cables.

Additionally, the precise location to where the cables **30, 34, 38, 42** are routed may be adjusted. For example, a guide bar **50** may be positioned on the cable exercise machine **10** that allows a pulley supporting the handle end **24** to move along the guide bar's length. Such adjustments may be made to customize the workout for the individual user's height and/or desired target muscle group.

Within the tower **14**, the pull cables **30, 34, 38, 42** may be routed in any appropriate manner such that a pull force on one of the pull cables **30, 34, 38, 42** causes the rotation of the flywheel **17**. For example, each of the pull cables **30, 34, 38, 42** may have an end attached directly to the spool subassembly **18**. In other examples, each of the pull cables **30, 34, 38, 42** may have an end attached directly to an intermediate component that attaches to the spool subassembly **18**. The movement of the pull cables **30, 34, 38, 42** in a first pulling direction may cause the spool subassembly **18** to rotate in a first direction about the central shaft **19**. Further, counterweights **20, 22** may be in communication with the spool subassembly **18** and arranged to rotate the spool subassembly **18** in a second returning direction. Further, the pull cables **30, 34, 38, 42** may be routed with a single pulley or with multiple pulleys. In some examples, multiple pulleys are used to distribute the load to more than one location on the tower to provide support for the forces generated by a user pulling the pull cables **30, 34, 38, 42** against a high resistance. Further, at least one of the pulleys incorporated within the tower may be a tensioner pulley that

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is intended to reduce the slack in the cables so that the resistance felt by the user is consistent throughout the pull.

A first cross bar **52** and a second cross bar **54** may collectively span from a first side **56** to a second side **58** of the tower **14**. The cross bars **52, 54** collectively support an assembly member **60** that is oriented in a transverse orientation to the cross bars **52, 54**. The central shaft **19** is inserted into an opening of the assembly member **60** and supports the flywheel assembly **16**.

The flywheel assembly **16** includes an arm **62** that is pivotally coupled to a fixture **64** connected to the first cross bar **52**. The arm **62** contains at least one magnetic unit **63** arranged to provide a desired magnetic flux. As the arm **62** is rotated to or away from the proximity of the flywheel **17**, the magnetic flux through which the flywheel **17** rotates changes, thereby altering the amount of rotational resistance experienced by the flywheel **17**.

The flywheel **17** may be constructed of multiple parts. For example, the flywheel **17** may include a magnetically conductive rim **66**. In other embodiments, the flywheel **17** includes another type of magnetically conductive component that interacts with the magnetic flux imparted by the arm **62**. As the magnetic flux increases, more energy is required to rotate the flywheel **17**. Thus, a user must impart a greater amount of energy as he or she pulls on the pull cable to rotate the flywheel **17**. As a result of the increased resistance, the user will consume more calories. Likewise, as the magnetic flux decreases, less energy is required to rotate the flywheel **17**. Thus, a user can impart a lower amount of energy as he or she pulls on the pull cable to rotate the flywheel **17**.

While this example has been described with specific reference to an arm **62** producing a magnetic flux that pivots to and away from the flywheel **17** to achieve a desired amount of resistance to rotation of the flywheel **17**, any appropriate mechanism for applying a resistance to the rotation of the flywheel **17** may be used in accordance with the principles described herein. For example, the arm **62** may remain at a fixed distance from the flywheel **17**. In such an example, the magnetic flux may be altered by providing a greater electrical input to achieve a greater magnetic output. Further, in lieu of pivoting the arm **62** to and away from the flywheel **17**, a magnetic unit **63** may be moved towards or away from the flywheel **17** with a linear actuator or another type of actuator.

The cable exercise machine **10** may further include a control panel **68** which may be incorporated into the outer covering **12** or some other convenient location. The control panel **68** may include various input devices (e.g., buttons, switches, dials, etc.) and output devices (e.g., LED lights, displays, alarms, etc.). The control panel **68** may further include connections for communication with other devices. Such input devices may be used to instruct the flywheel assembly to change a level of magnetic resistance, track calories, set a timer, play music, play an audiovisual program, provide other forms of entertainment, execute a pre-programmed workout, perform another type of task, or combinations thereof. A display can indicate the feedback to the user about his or her performance, the resistance level at which the resistance mechanism is set, the number of calories consumed during the workout, other types of information, or combinations thereof.

FIG. 6 illustrates a cross sectional view of a resistance mechanism of the cable exercise machine of FIG. 1. In this example, the central shaft **19** is rigidly connected to a body **74** of the flywheel **17**. A bearing subassembly **76** is disposed around the central shaft **19** and is positioned to transfer a

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rotational load imparted in a first direction to the flywheel 17. Concentric to the central shaft 19 and the bearing subassembly 76 is the spool subassembly 18 which is connected to at least one of the pull cables 30, 34, 38, 42.

In a retracted position, a portion of a pull cable connected to the spool subassembly 18 is wound in slots 78 formed in the spool subassembly 18. As the pull cable is pulled by the user during a workout, the pull cable exerts a force tangential in the first direction to the spool subassembly 18 and rotates the spool subassembly 18 in the first direction as the pull cable unwinds. In some examples, a counterweight cable that is also connected to the spool subassembly 18 winds up in the slots 78 of the spool subassembly 18. This motion shortens the available amount of the counterweight cable and causes at least one of the counterweights 20, 22 to be raised to a higher elevation. When the force on the pull cable ceases, the gravity on the counterweight pulls the counterweight back to its original position, which imposes another tangential force in a second direction on the spool subassembly 18 causing it to unwind the counterweight cable in the second direction. The unwinding motion of the counterweight cable causes the pull cable to rewind back into the slots 78 of the spool subassembly 18. This motion pulls the pull cable back into the tower 14 until the stoppers 48 attached to the handle ends 24 of the pull cables prevent the pull cables from moving.

As the spool subassembly 18 rotates in the first direction, the bearing subassembly 76 is positioned to transfer the rotational load from the spool subassembly 18 to the central shaft 19 which transfers the rotational load to the flywheel body 74. As a result, the flywheel 17 rotates with the spool subassembly 18 in the first direction as the user pulls on the pull cables. However, as the spool subassembly 18 rotates in the second direction imposed by the counterweights 20, 22 returning to their original positions, the bearing subassembly 76 is not positioned to transfer the rotational load from the spool subassembly 18 to the central shaft 19. Thus, no rotational load is transferred to the flywheel body 74. As a result, the flywheel 17 remains in its rotational orientation as the spool subassembly 18 rotates in the second direction. Consequently, the flywheel 17 moves in just the first direction.

While this example has been described with specific reference to the flywheel 17 rotating in just a single direction, in other examples the flywheel is arranged to rotate in multiple directions. Further, while this example has been described with reference to a specific arrangement of cables, pulleys, and counterweights, these components of the cable exercise machine 10 may be arranged in other configurations.

A sensor 80 can be arranged to track the rotational position of the flywheel 17. As the flywheel 17 rotates from the movement of the pull cables, the sensor 80 can track the revolutions that the flywheel rotates. In some examples, the sensor 80 may track half revolutions, quarter revolutions, other fractional revolutions, or combinations thereof.

The sensor 80 may be any appropriate type of sensor that can determine the rotational position of the flywheel 17. Further, the sensor 80 may be configured to determine the flywheel's position based on features incorporated into the flywheel body 74, the magnetically conductive rim 66, or the central shaft 19 of the flywheel 17. For example, the sensor 80 may be a mechanical rotary sensor, an optical rotary sensor, a magnetic rotary sensor, a capacitive rotary sensor, a geared multi-turn sensor, an incremental rotary sensor, another type of sensor, or combinations thereof. In some examples, a visual code may be depicted on the flywheel

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body 74, and the sensor 80 may read the position of the visual code to determine the number of revolutions or partial revolutions. In other examples, the flywheel body 74 includes at least one feature that is counted as the features rotate with the flywheel body 74. In some examples, a feature is a magnetic feature, a recess, a protrusion, an optical feature, another type of feature, or combinations thereof.

The sensor 80 can feed the number of revolutions and/or partial revolutions to a processor as an input. The processor can also receive as an input the level of resistance that was applied to the flywheel 17 when the revolutions occurred. As a result, the processor can cause the amount of energy or number of calories consumed to be determined. In some examples, other information, other than just the calorie count, is determined using the revolution count. For example, the processor may also determine the expected remaining life of the cable exercise machine 10 based on use. Such a number may be based, at least in part, on the number of flywheel revolutions. Further, the processor may also use the revolution count to track when maintenance should occur on the machine, and send a message to the user or another person indicating that maintenance should be performed on the machine based on usage.

In some examples, the sensor 80 is accompanied with an accelerometer. The combination of the inputs from the accelerometer and the sensor can at least aid the processor in determining the force exerted by the user during each pull. The processor may also track the force per pull, the average force over the course of the workout, the trends of force over the course of the workout, and so forth. For example, the processor may cause a graph of force per pull to be displayed to the user. In such a graph, the amount of force exerted by the user at the beginning of the workout versus the end of the workout may be depicted. Such information may be useful to the user and/or a trainer in customizing a workout for the user.

The number of calories per pull may be presented to the user in a display of the cable exercise machine 10. In some examples, the calories for an entire workout are tracked and presented to the user. In some examples, the calorie count is presented to the user through the display, through an audible mechanism, through a tactile mechanism, through another type of sensory mechanism, or combinations thereof.

FIG. 7 illustrates a perspective view of a tracking system 82 of a cable exercise machine 10 in accordance with the present disclosure. The tracking system 82 may include a combination of hardware and programmed instructions for executing the functions of the tracking system 82. In this example, the tracking system 82 includes processing resources 84 that are in communication with memory resources 86. Processing resources 84 include at least one processor and other resources used to process programmed instructions. The memory resources 86 represent generally any memory capable of storing data such as programmed instructions or data structures used by the tracking system 82. The programmed instructions shown stored in the memory resources 86 include a counter 88 and a calorie tracker 90.

The memory resources 86 include a computer readable storage medium that contains computer readable program code to cause tasks to be executed by the processing resources 84. The computer readable storage medium may be tangible and/or non-transitory storage medium. The computer readable storage medium may be any appropriate storage medium that is not a transmission storage medium. A non-exhaustive list of computer readable storage medium

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types includes non-volatile memory, volatile memory, random access memory, write only memory, flash memory, electrically erasable program read only memory, magnetic storage media, other types of memory, or combinations thereof.

The counter **88** represents programmed instructions that, when executed, cause the processing resources **84** to count the number of revolutions and/or partial revolutions made by the flywheel **17**. The calorie tracker **90** represents programmed instructions that, when executed, cause the processing resources **84** to track the number of calories burned by the user during this workout. The calorie tracker **90** takes inputs from at least the sensor **80** and the resistance mechanism to calculate the number of calories burned.

Further, the memory resources **86** may be part of an installation package. In response to installing the installation package, the programmed instructions of the memory resources **86** may be downloaded from the installation package's source, such as a portable medium, a server, a remote network location, another location, or combinations thereof. Portable memory media that are compatible with the principles described herein include DVDs, CDs, flash memory, portable disks, magnetic disks, optical disks, other forms of portable memory, or combinations thereof. In other examples, the program instructions are already installed. Here, the memory resources can include integrated memory such as a hard drive, a solid state hard drive, or the like.

In some examples, the processing resources **84** and the memory resources **86** are located within the same physical component, such as the cable exercise machine **10** or a remote component in connection with the cable exercise machine **10**. The memory resources **86** may be part of the cable exercise machine's main memory, caches, registers, non-volatile memory, or elsewhere in the physical component's memory hierarchy. Alternatively, the memory resources **86** may be in communication with the processing resources **84** over a network. Further, the data structures, such as the libraries, calorie charts, histories, and so forth may be accessed from a remote location over a network connection while the programmed instructions are located locally. Thus, information from the tracking system **82** may be accessible on a user device, on a server, on a collection of servers, or combinations thereof.

FIG. **8** illustrates a block diagram of a display **92** of a cable exercise machine **10** in accordance with the present disclosure. In this example, the display **92** includes a resistance level indicator **94**, a pull count indicator **96**, and a calorie indicator **98**. The resistance level indicator **94** may be used to display the current resistance setting of the cable exercise machine **10**.

The pull count indicator **96** may track the number of pulls that have been executed by the user. Such a number may track the time periods where the flywheel **17** is rotating, the number of periods when the flywheel **17** is not rotating, the time periods where the spool subassembly **18** is rotating in the first direction, the time periods where the spool subassembly **18** is rotating in the second direction, the movement of the counterweights **20**, **22**, another movement, or combinations thereof. In some examples, the cable exercise machine **10** has an ability to determine whether a pull is a partial pull or a full length pull. In such examples, the pull count indicator **96** may depict the total pulls and partial pulls.

The calorie indicator **98** may depict the current calculation of consumed calories in the workout. In some examples, the calorie count reflects just the input from the sensor **80**. In other examples, the calorie count reflects the input from

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the flywheel assembly **16** and the sensor **80**. In other examples, inputs from an accelerometer are input into the flywheel assembly **16**, a pedometer worn by the user, another exercise machine (i.e. a treadmill or elliptical with calorie tracking capabilities), another device, or combinations thereof are also reflected in the calorie indicator **98**.

While the above examples have been described with reference to a specific cable exercise machine with pulleys and cables for directing the rotation of the flywheel **17** and pull cables **30**, **34**, **38**, **42**, any appropriate type of cable pull machine may be used. For example, the cable exercise machine may use bearing surfaces or sprockets to guide the cables. In other examples, the cables may be partially made of chains, ropes, wires, metal cables, other types of cables, or combinations thereof. Further, the cables may be routed in different directions than depicted above.

INDUSTRIAL APPLICABILITY

In general, the invention disclosed herein may provide a user with the advantage of an intuitive energy tracking device incorporated into a cable exercise machine. The user can adjust his or her workout based on the number of calories consumed. Further, the user may use the calorie count to adjust his or her diet throughout the day. The cable exercise machine described above may also have the ability to track other information besides the calorie count, such as a force exerted per pull as well as track a maintenance schedule based on the flywheel's revolution count.

The level of resistance applied by the magnetic resistance mechanism of the present exemplary system can be finely controlled via electronic inputs. The inputs or outputs of these and other types of adjustable resistance mechanisms can be tracked and stored. The tracked level of resistance can then be sent to a calorie tracker. The calorie tracker can determine the amount of calories burned during each individual pull and/or a group of pulls collectively during the course of the entire workout based on the inputs about the flywheel position and the resistance level. This may provide a user with an accurate representation of the work performed on the cable exercise machine.

The present system may also provide a precise calculation of work performed during the workout, while providing the user the flexibility of using multiple resistance cables. The unique flywheel arrangement allows for the use of a single flywheel to resist the movement of multiple different resistance cables. According to the present configuration, the flywheel rotates in a single direction regardless of the direction that the pull cable is moving. Further, in this example, the flywheel is just rotating when a pull force is exerted by the user, thus the position of the flywheel represents just the work done as part of the workout. Further, the calorie counting calculations of the cable exercise machine are simplified because the sensor is insulated from at least the pull cable's return forces that may skew the calorie counting calculations. Consequently, the tracked calories can represent just those calories that are consumed during the course of the workout.

Additionally, the present exemplary system also determines the angular position of the flywheel during operation. Measuring the angular position of the flywheel provides advantages over merely measuring forces applied directly to the flywheel, such as torque or magnetic resistance. For example, angular position changes may be implemented in the calculation process. Further, the angular displacement of the flywheel may reflect the total interaction between all of the components of the flywheel assembly, which can provide

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a more accurate understanding of when the cable exercise machine ought to be flagged for routine service.

Such a cable exercise machine may include a tower that has the ability to position the ends of the pull cables at a location above the user's head. Further, the user has an ability to adjust the position of the cable ends along a height of the cable exercise machine so that the user can refine the muscle groups of interest. In the examples of the exercise machine disclosed above, the user has four pull cables to which the user can attach a handle. Thus, the user can work muscle groups that involve pulling a low positioned cable with a first hand while pulling a relatively higher positioned cable with a second hand. The pull cable ends can be adjusted to multiple positions when the magnetic flywheel is positioned in the middle of the cable exercise machine. This central location allows for the pull cables to be attached to the spool subassembly from a variety of angles.

The invention claimed is:

1. A cable exercise machine comprising:

a first vertical guide;

a first pull cable routed through a first pulley, the first pulley movable along a length of the first vertical guide;

a second vertical guide;

a second pull cable routed through a second pulley, the second pulley movable along a length of the second vertical guide; and

an electronic control panel configured to:

electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable,

electronically allow for adjustment of the level of resistance to the user pulling on the first pull cable and/or the second pull cable, and

electronically present the adjusted level of resistance to the user.

2. The cable exercise machine of claim 1, wherein:

the first pull cable includes a first handle end equipped with a first handle connector that includes a first spring-loaded loop configured to have a first handle connected thereto; and

the second pull cable includes a second handle end equipped with a second handle connector that includes a second spring-loaded loop configured to have a second handle connected thereto.

3. The cable exercise machine of claim 2, wherein:

the first pull cable includes a first stopper attached to the first handle end with a cross sectional thickness that is large enough to stop the first handle end from being pulled into an opening in a first outer covering; and

the second pull cable includes a second stopper attached to the second handle end with a cross-sectional thickness that is large enough to stop the second handle end from being pulled into an opening in a second outer covering.

4. The cable exercise machine of claim 1, wherein:

the first pulley is movable along the length of the first vertical guide to customize a workout for a height of the user; and

the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user.

5. The cable exercise machine of claim 1, wherein:

the first pulley is movable along the length of the first vertical guide to customize a workout for a desired target muscle group of the user; and

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the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user.

6. The cable exercise machine of claim 1, wherein:

the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine; and

the second vertical guide extends from an upper right location of the cable exercise machine to a lower right location of the cable exercise machine.

7. The cable exercise machine of claim 6, wherein:

the first pulley is further rotatable from side to side on the first vertical guide; and

the second pulley is further rotatable from side to side on the second vertical guide.

8. The cable exercise machine of claim 6, wherein the first pulley is movable to the lower left location while the second pulley is movable to the upper right location.

9. The cable exercise machine of claim 1, wherein the electronic control panel is incorporated into an outer covering of the cable exercise machine.

10. The cable exercise machine of claim 1, wherein:

the first vertical guide comprises a first vertical guide bar; and

the second vertical guide comprises a second vertical guide bar.

11. The cable exercise machine of claim 1, wherein:

the cable exercise machine further comprises an electromagnetic unit linked to the first pull cable and to the second pull cable, the electromagnetic unit configured to apply the one or more levels of resistance to the user pulling on the first pull cable and/or the second pull cable; and

the electronic control panel is further configured to electronically adjust the level of resistance applied by the electromagnetic unit to the user pulling on the first pull cable and/or the second pull cable.

12. The cable exercise machine of claim 1, wherein:

the cable exercise machine further comprises a magnetic unit and a flywheel linked to the first pull cable and to the second pull cable, the magnetic unit and the flywheel configured to apply the one or more levels of resistance to the user pulling on the first pull cable and/or the second pull cable; and

the electronic control panel is further configured to electronically adjust the level of resistance applied by the magnetic unit and the flywheel to the user pulling on the first pull cable and/or the second pull cable.

13. The cable exercise machine of claim 1, wherein:

the cable exercise machine further comprises a frame; the first vertical guide is incorporated into the frame; and the second vertical guide is incorporated into the frame.

14. The cable exercise machine of claim 13, wherein the frame comprises a tower.

15. The cable exercise machine of claim 1, wherein the electronic control panel is further configured to electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of a workout.

16. The cable exercise machine of claim 15, wherein the electronic control panel is further configured to electronically display a trend of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout.

17. The cable exercise machine of claim 15, wherein the electronic control panel is further configured to electronically display a graph of the force exerted by the user during

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each pull of the first pull cable and/or the second pull cable over the course of the workout.

18. The cable exercise machine of claim 17, wherein the graph depicts the force exerted by the user at the beginning of the workout versus the end of the workout.

19. The cable exercise machine of claim 1, wherein the electronic control panel is further configured to:

electronically receive input from the user to play an audiovisual program; and

play the audiovisual program for the user.

20. The cable exercise machine of claim 1, wherein:

electronically receive input from the user via a dial to adjust the level of resistance; and

electronically present the adjusted level of resistance to the user via an electronic display.

21. The cable exercise machine of claim 1, wherein the electronic control panel is further configured to:

electronically receive input from the user to play music; and

electronically play the music for the user.

22. The cable exercise machine of claim 1, wherein the electronic control panel is further configured to:

electronically receive input from the user to execute a pre-programmed workout; and

electronically execute the pre-programmed workout for the user.

23. The cable exercise machine of claim 1, wherein the electronic control panel is further configured to electronically display a count of a number of times that the user pulled on the first pull cable and/or the second pull cable over the course of a workout.

24. The cable exercise machine of claim 1, wherein the electronic control panel is further configured to:

electronically determine whether a pull by the user on the first pull cable and/or the second pull cable is a partial pull or a full-length pull; and

electronically display a count that includes a number of times that the user performed a full-length pull, and excludes a number of times that the user performed a partial pull, on the first pull cable and/or the second pull cable over the course of a workout.

25. The cable exercise machine of claim 1, wherein: the first pulley is movable along the length of the first vertical guide to customize a workout for a height of the user;

the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user;

the first pulley is movable along the length of the first vertical guide to customize the workout for a desired target muscle group of the user;

the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user;

the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine;

the second vertical guide extends from an upper right location of the cable exercise machine to a lower right location of the cable exercise machine;

the first pulley is movable to the lower left location while the second pulley is movable to the upper right location; and

the electronic control panel is further configured to:

electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout;

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electronically display a trend of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout;

electronically display a graph of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout, the graph depicting the force exerted by the user at the beginning of the workout versus the end of the workout;

electronically receive input from the user to play an audiovisual program, and play the audiovisual program for the user;

electronically receive input from the user to play music, and electronically play the music for the user;

electronically receive input from the user to execute a pre-programmed workout, and electronically execute the pre-programmed workout for the user;

electronically determine whether a pull by the user on the first pull cable and/or the second pull cable is a partial pull or a full-length pull; and

electronically display a count that includes a number of times that the user performed a full-length pull, and excludes a number of times that the user performed a partial pull, on the first pull cable and/or the second pull cable over the course of the workout.

26. A cable exercise machine comprising:

a first pull cable routed through a first pulley;

a second pull cable routed through a second pulley; and

an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable,

electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable,

electronically present the adjusted level of resistance to the user, and

electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of a workout.

27. The cable exercise machine of claim 26, wherein the electronic control panel is further configured to electronically display a trend of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout.

28. The cable exercise machine of claim 26, wherein the electronic control panel is further configured to electronically display a graph of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout.

29. The cable exercise machine of claim 28, wherein the graph depicts the force exerted by the user at the beginning of the workout versus the end of the workout.

30. The cable exercise machine of claim 26, wherein:

the cable exercise machine further comprises an electromagnetic unit linked to the first pull cable and to the second pull cable, the electromagnetic unit configured to apply the one or more levels of resistance to the user pulling on the first pull cable and/or the second pull cable; and

the electronic control panel is further configured to electronically adjust the level of resistance applied by the electromagnetic unit to the user pulling on the first pull cable and/or the second pull cable.

31. The cable exercise machine of claim 26, wherein: the cable exercise machine further comprises a magnetic unit and a flywheel linked to the first pull cable and to

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the second pull cable, the magnetic unit and the fly-wheel configured to apply the one or more levels of resistance to the user pulling on the first pull cable and/or the second pull cable; and
the electronic control panel is further configured to electronically adjust the level of resistance applied by the magnetic unit and the flywheel to the user pulling on the first pull cable and/or the second pull cable.

32. The cable exercise machine of claim 26, wherein: the cable exercise machine further comprises a frame; the first pulley is supported by the frame; and the second pulley is supported by the frame.

33. The cable exercise machine of claim 32, wherein the frame comprises a tower.

34. The cable exercise machine of claim 26, wherein: the first pull cable includes a first handle end equipped with a first handle connector that includes a first spring-loaded loop configured to have a first handle connected thereto; and
the second pull cable includes a second handle end equipped with a second handle connector that includes a second spring-loaded loop configured to have a second handle connected thereto.

35. The cable exercise machine of claim 34, wherein: the first pull cable includes a first stopper attached to the first handle end with a cross sectional thickness that is large enough to stop the first handle end from being pulled into an opening in a first outer covering; and
the second pull cable includes a second stopper attached to the second handle end with a cross-sectional thickness that is large enough to stop the second handle end from being pulled into an opening in a second outer covering.

36. The cable exercise machine of claim 26, wherein: the cable exercise machine further comprises a first vertical guide;
the first pulley is movable along a length of the first vertical guide;
the cable exercise machine further comprises a second vertical guide; and
the second pulley is movable along a length of the second vertical guide.

37. The cable exercise machine of claim 36, wherein: the first pulley is movable along the length of the first vertical guide to customize the workout for a height of the user; and
the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user.

38. The cable exercise machine of claim 36, wherein: the first pulley is movable along the length of the first vertical guide to customize the workout for a desired target muscle group of the user; and
the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user.

39. The cable exercise machine of claim 36, wherein: the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine; and
the second vertical guide extends from an upper right location of the cable exercise machine to a lower right location of the cable exercise machine.

40. The cable exercise machine of claim 39, wherein: the first pulley is further rotatable from side to side on the first vertical guide; and

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the second pulley is further rotatable from side to side on the second vertical guide.

41. The cable exercise machine of claim 39, wherein the first pulley is movable to the lower left location while the second pulley is movable to the upper right location.

42. The cable exercise machine of claim 36, wherein: the first vertical guide comprises a first vertical guide bar; and
the second vertical guide comprises a second vertical guide bar.

43. The cable exercise machine of claim 26, wherein the electronic control panel is incorporated into an outer covering of the cable exercise machine.

44. The cable exercise machine of claim 26, wherein the electronic control panel is further configured to: electronically receive input from the user to play an audiovisual program; and
play the audiovisual program for the user.

45. The cable exercise machine of claim 26, wherein: electronically receive input from the user via a dial to adjust the level of resistance; and
electronically present the adjusted level of resistance to the user via an electronic display.

46. The cable exercise machine of claim 26, wherein the electronic control panel is further configured to: electronically receive input from the user to play music; and
electronically play the music for the user.

47. The cable exercise machine of claim 26, wherein the electronic control panel is further configured to: electronically receive input from the user to execute a pre-programmed workout; and
electronically execute the pre-programmed workout for the user.

48. The cable exercise machine of claim 26, wherein the electronic control panel is further configured to electronically display a count of a number of times that the user pulled on the first pull cable and/or the second pull cable over the course of the workout.

49. The cable exercise machine of claim 26, wherein the electronic control panel is further configured to: electronically determine whether a pull by the user on the first pull cable and/or the second pull cable is a partial pull or a full-length pull; and
electronically display a count that includes a number of times that the user performed a full-length pull, and excludes a number of times that the user performed a partial pull, on the first pull cable and/or the second pull cable over the course of the workout.

50. The cable exercise machine of claim 26, wherein: the cable exercise machine further comprises a first vertical guide;
the first pulley is movable along a length of the first vertical guide;
the cable exercise machine further comprises a second vertical guide;
the second pulley is movable along a length of the second vertical guide;
the first pulley is movable along the length of the first vertical guide to customize the workout for a height of the user;
the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user;
the first pulley is movable along the length of the first vertical guide to customize the workout for a desired target muscle group of the user;

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the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user;

the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine;

the second vertical guide extends from an upper right location of the cable exercise machine to a lower right location of the cable exercise machine;

the first pulley is movable to the lower left location while the second pulley is movable to the upper right location; and

the electronic control panel is further configured to:

- electronically display a trend of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout,
- electronically display a graph of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout, the graph depicting the force exerted by the user at the beginning of the workout versus the end of the workout,
- electronically receive input from the user to play an audiovisual program, and play the audiovisual program for the user,
- electronically receive input from the user to play music, and electronically play the music for the user,
- electronically receive input from the user to execute a pre-programmed workout, and electronically execute the pre-programmed workout for the user,
- electronically determine whether a pull by the user on the first pull cable and/or the second pull cable is a partial pull or a full-length pull, and
- electronically display a count that includes a number of times that the user performed a full-length pull, and excludes a number of times that the user performed a partial pull, on the first pull cable and/or the second pull cable over the course of the workout.

51. A cable exercise machine comprising:

- a first pull cable routed through a first pulley;
- a second pull cable routed through a second pulley; and
- an electronic control panel configured to:

- electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable,
- electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable,
- electronically present the adjusted level of resistance to the user, and
- electronically receive input from the user to play an audiovisual program, and play the audiovisual program for the user.

52. The cable exercise machine of claim **51**, wherein:

- the input from the user to adjust the level of resistance is received via a dial; and
- the adjusted level of resistance to the user is presented via an electronic display.

53. The cable exercise machine of claim **51**, wherein the electronic control panel is further configured to:

- electronically receive input from the user to play music; and
- electronically play the music for the user.

54. The cable exercise machine of claim **51**, wherein the electronic control panel is further configured to:

- electronically receive input from the user to execute a pre-programmed workout; and

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electronically execute the pre-programmed workout for the user.

55. The cable exercise machine of claim **51**, wherein the electronic control panel is further configured to electronically display a count of a number of times that the user pulled on the first pull cable and/or the second pull cable over the course of a workout.

56. The cable exercise machine of claim **51**, wherein the electronic control panel is further configured to:

- electronically determine whether a pull by the user on the first pull cable and/or the second pull cable is a partial pull or a full-length pull; and
- electronically display a count that includes a number of times that the user performed a full-length pull, and excludes a number of times that the user performed a partial pull, on the first pull cable and/or the second pull cable over the course of a workout.

57. The cable exercise machine of claim **51**, wherein:

- the cable exercise machine further comprises an electromagnetic unit linked to the first pull cable and to the second pull cable, the electromagnetic unit configured to apply the one or more levels of resistance to the user pulling on the first pull cable and/or the second pull cable; and
- the electronic control panel is further configured to electronically adjust the level of resistance applied by the electromagnetic unit to the user pulling on the first pull cable and/or the second pull cable.

58. The cable exercise machine of claim **51**, wherein:

- the cable exercise machine further comprises a magnetic unit and a flywheel linked to the first pull cable and to the second pull cable, the magnetic unit and the flywheel configured to apply the one or more levels of resistance to the user pulling on the first pull cable and/or the second pull cable; and
- the electronic control panel is further configured to electronically adjust the level of resistance applied by the magnetic unit and the flywheel to the user pulling on the first pull cable and/or the second pull cable.

59. The cable exercise machine of claim **51**, wherein:

- the cable exercise machine further comprises a frame;
- the first pulley is supported by the frame; and
- the second pulley is supported by the frame.

60. The cable exercise machine of claim **59**, wherein the frame comprises a tower.

61. The cable exercise machine of claim **51**, wherein:

- the first pull cable includes a first handle end equipped with a first handle connector that includes a first spring-loaded loop configured to have a first handle connected thereto; and
- the second pull cable includes a second handle end equipped with a second handle connector that includes a second spring-loaded loop configured to have a second handle connected thereto.

62. The cable exercise machine of claim **61**, wherein:

- the first pull cable includes a first stopper attached to the first handle end with a cross sectional thickness that is large enough to stop the first handle end from being pulled into an opening in a first outer covering; and
- the second pull cable includes a second stopper attached to the second handle end with a cross-sectional thickness that is large enough to stop the second handle end from being pulled into an opening in a second outer covering.

63. The cable exercise machine of claim **51**, wherein:

- the cable exercise machine further comprises a first vertical guide;

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the first pulley is movable along a length of the first vertical guide;
the cable exercise machine further comprises a second vertical guide; and
the second pulley is movable along a length of the second vertical guide.

64. The cable exercise machine of claim 63, wherein:
the first pulley is movable along the length of the first vertical guide to customize a workout for a height of the user; and
the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user.

65. The cable exercise machine of claim 64, wherein:
the first pulley is movable along the length of the first vertical guide to customize a workout for a desired target muscle group of the user; and
the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user.

66. The cable exercise machine of claim 64, wherein:
the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine; and
the second vertical guide extends from an upper right location of the cable exercise machine to a lower right location of the cable exercise machine.

67. The cable exercise machine of claim 66, wherein:
the first pulley is further rotatable from side to side on the first vertical guide; and
the second pulley is further rotatable from side to side on the second vertical guide.

68. The cable exercise machine of claim 66, wherein the first pulley is movable to the lower left location while the second pulley is movable to the upper right location.

69. The cable exercise machine of claim 64, wherein:
the first vertical guide comprises a first vertical guide bar; and
the second vertical guide comprises a second vertical guide bar.

70. The cable exercise machine of claim 51, wherein the electronic control panel is incorporated into an outer covering of the cable exercise machine.

71. The cable exercise machine of claim 51, wherein the electronic control panel is further configured to electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of a workout.

72. The cable exercise machine of claim 71, wherein the electronic control panel is further configured to electronically display a trend of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout.

73. The cable exercise machine of claim 71, wherein the electronic control panel is further configured to electronically display a graph of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout.

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74. The cable exercise machine of claim 73, wherein the graph depicts the force exerted by the user at the beginning of the workout versus the end of the workout.

75. The cable exercise machine of claim 51, wherein:
the cable exercise machine further comprises a first vertical guide;
the first pulley is movable along a length of the first vertical guide;
the cable exercise machine further comprises a second vertical guide;
the second pulley is movable along a length of the second vertical guide;
the first pulley is movable along the length of the first vertical guide to customize a workout for a height of the user;
the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user;
the first pulley is movable along the length of the first vertical guide to customize the workout for a desired target muscle group of the user;
the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user;
the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine;
the second vertical guide extends from an upper right location of the cable exercise machine to a lower right location of the cable exercise machine;
the first pulley is movable to the lower left location while the second pulley is movable to the upper right location; and

the electronic control panel is further configured to:
electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout;
electronically display a trend of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout;
electronically display a graph of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout, the graph depicting the force exerted by the user at the beginning of the workout versus the end of the workout;
electronically receive input from the user to play music, and electronically play the music for the user;
electronically receive input from the user to execute a pre-programmed workout, and electronically execute the pre-programmed workout for the user;
electronically determine whether a pull by the user on the first pull cable and/or the second pull cable is a partial pull or a full-length pull; and
electronically display a count that includes a number of times that the user performed a full-length pull, and excludes a number of times that the user performed a partial pull, on the first pull cable and/or the second pull cable over the course of the workout.

* * * * *

EXHIBIT 12

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
				Filing Date	12-08-2020
				First Named Inventor	Michael L. Olson
				Art Unit	3784
				Examiner Name	
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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1.	9403047	B2	2016-08-02	OLSON et al.	
	2.	9011291	B2	2015-04-21	BIRRELL	
	3.	5039091		1991-08-13	JOHNSON	
	4.	5588938		1996-12-31	SCHNIDER et al.	
	5.	4533136		1985-08-06	SMITH et al.	
	6.	5484358		1996-01-16	WANG et al.	
	7.	8764609	B1	2017-07-01	ELAHMADIE	
	8.	5354252		1994-10-11	HABING	
	9.	5286243		1994-02-15	LAPCEVIC	
	10.	7226402	B1	2007-06-05	JOYA	
	11.	3926430		1975-12-16	GOOD Jr.	
	12.	6491610	B1	2002-12-10	HENN	
	13.	D352536		1994-11-15	BYRD et al.	
	14.	9254409	B2	2016-02-09	DALEBOUT et al.	
	15.	6857993	B2	2005-02-22	YEH	
	16.	7364538	B2	2008-04-29	AUCAMP	
	17.	5527245		1996-06-18	DALEBOUT et al.	
	18.	6746371		2004-06-08	BROWN et al.	
	19.	7011326		2006-03-14	SCHROEDER et al.	
	20.	7584673		2009-09-08	SHIMIZU	
	21.	7740563		2010-06-22	DALEBOUT et al.	
	22.	9616276		2017-04-11	DALEBOUT et al.	
	23.	9539458	B1	2017-01-10	ROSS	
	24.	6454679	B1	2002-09-24	RADOW	
	25.	4968028	A	1990-11-06	WEHRELL	
	26.	6030321	A	2000-02-29	FUENTES	
	27.	7942793	B2	2011-05-17	MILLS et al.	
	28.	6699159	B2	2004-03-02	ROUSE	
	29.	7540828	B2	2009-06-02	WATTERSON et al.	
	30.	5830113	A	1998-11-03	COODY et al.	
	31.	6123649	A	2000-09-26	LEE et al.	
	32.	6837830	B2	2005-01-04	ELDRIDGE	
	33.	8398529		2013-03-19	ELLIS et al.	
	34.	7575537		2009-08-18	ELLIS	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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				First Named Inventor	Michael L. Olson
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				Examiner Name	
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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	35.	6027429	A	2000-02-22	DANIELS	
	36.	9878200	B2	2018-01-30	EDMONDSON	
	37.	9662529	B2	2017-05-30	MILLER et al.	
	38.	9415257	B2	2016-08-15	HABING	
	39.	9393453	B2	2016-07-19	WATTERSON	
	40.	9211433	B2	2015-12-15	HALL	
	41.	8808152	B1	2014-08-19	MIDGETT	
	42.	10426989	B2	2019-10-01	DALEBOUT	
	43.	10279212	B2	2019-05-07	DALEBOUT et al.	
	44.	9757605	B2	2014-09-12	OLSON et al.	
	45.	9968816	B2	2018-05-15	OLSON et al.	
	46.	10188890	B2	2019-01-29	OLSON et al.	
	47.	5000442		1991-01-29	DALEBOUT et al.	
	48.	6030320		2000/02/29	STEARNS et al.	
	49.	5344376		1994/09/06	BOSTIC et al.	
	50.	4725057		1988/02/16	SHIFFERAW	
	51.	6958032	B1	2005/10/25	SMITH	
	52.	10293211	B2	2019-05-21	WATTERSON et al.	
	53.	9700751	B2	2017-07-11	VERDI	
	54.	7641597	B2	2010-01-06	SCHMIDT	
	55.	5409435		1995-04-25	DANIELS	
	56.	D633581	S	2011-03-01	THULIN	
	57.	D552193	S	2007-10-02	HUSTED et al.	
	58.	D512113	S	2005-11-29	CARTER	
	59.	D511190	S	2005-11-01	PANATTA	
	60.	D457580	S	2002-05-21	WEBBER	
	61.	D746388	S	2015-12-29	HOCKRIDGE	
	62.	D520085	S	2006-05-02	WILLARDSON et al.	
	63.	D807445	S	2018-01-09	GETTLE	
	64.	8550964	B2	2013-10-08	ISH III et al.	
	65.	8500607	B2	2013-08-06	VITTONI et al.	
	66.	8096926	B1	2012-01-17	BATCA	
	67.	D868090		2019-12-03	CUTLER et al.	
	68.	10569121	B2	2020-02-25	WATTERSON	
	69.	10441840	B2	2019-10-15	DALEBOUT et al.	
	70.	8986165	B2	2015-03-24	ASHBY	
	71.	6436008	B2	2002-08-20	SKOWRONSKI et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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				First Named Inventor	Michael L. Olson
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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	72.	D868909		2019-12-03	GORDON CUTLER	
	73.	3123646		1964-03-03	NELSON R. EASTON	
	74.	3579339		1971-05-18	CATHERINE THE-LIN CHANG	
	75.	6488612		2002-12-03	SCOTT SECHREST	
	76.	6599223		2003-07-29	LEAO WANG	
	77.	6669607		2003-12-30	MICHAEL SLAWINSKI	
	78.	6811520		2004-11-02	PETER WU	
	79.	7311640		2007-12-25	WILFRIED BAATZ	
	80.	7381161		2008-06-03	JOSEPH K. ELLIS	
	81.	7524272		2009-04-28	ROBERT C. BURCK et al.	
	82.	7604572		2009-10-20	CHRISTOPHER STANFORD	
	83.	8029425		2011-10-04	BALANCED BODY INC	
	84.	8070657		2011-12-06	NDREW ROBERT LOACH	
	85.	8517899		2013-08-27	YIFENG ZHOU	
	86.	9044635		2015-06-02	ANDREW P. LULL	
	87.	9170223		2015-10-27	YOUNGHOON HYUN	
	88.	9468793		2016-10-18	D'MILES SALMON	
	89.	9511259		2016-12-06	DALE LLEWELYN MOUNTAIN	
	90.	10258828		2016-07-21	WILLIAM T. DALEBOUT	
	91.	10388183		2019-08-20	SCOTT R. WATTERSON	
	92.	10391361		2019-08-27	SCOTT R. WATTERSON	
	93.	10433612		2019-10-08	DARREN C. ASHBY	
	94.	10441840		2019-10-15	WILLIAM T. DALEBOUT	
	95.	10492519		2019-12-03	REBECCA LYNN CAPELL	
	96.	10493349		2019-12-03	ERIC S. WATTERSON	
	97.	10500473		2019-12-10	SCOTT R. WATTERSON	
	98.	10543395		2020-01-28	WADE A. POWELL et al.	
	99.	10561877		2020-02-18	RYAN WORKMAN	
	100.	10561893		2020-02-18	N. JEFFREY CHATTERTON	
	101.	10561894		2020-02-18	WILLIAM T. DALEBOUT	
	102.	10569121		2020-02-25	SCOTT R. WATTERSON	
	103.	10569123		2020-02-25	RYAN HOCHSTRASSER	
	104.	5362298		1994-11-08	BROWN	
	105.	10668320		2020-06-02	WATTERSON	
	106.	10758767		2020-09-01	MICHAEL L. OLSON et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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				First Named Inventor	Michael L. Olson
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1.	20100197462	A1	2010/08/05	PIANE, JR	
	2.	20030032531		2003-02-13	SIMONSON	
	3.	20020013200		2002-01-31	SECHREST	
	4.	20030045406		2003-03-06	STONE	
	5.	20020086779	A1	2002-07-04	WILKINSON	
	6.	20050148445	A1	2006-09-05	CARLE	
	7.	20130196821		2013-08-01	WATTERSON et al.	
	8.	20120088638		2012-04-12	LULL	
	9.	20050164837	A1	2005-07-28	ANDERSON et al.	
	10.	20070197346	A1	2007-08-23	SELIBER	
	11.	20050049117	A1	2005-03-03	RODGERS	
	12.	20070173392	A1	2009-10-20	STANFORD	
	13.	20030032528		2003-02-13	WU et al.	
	14.	20070287601	A1	2007-12-13	BURCK et al.	
	15.	20120277068		2012-11-01	ZHOU et al.	
	16.	20120065034		2012-03-15	LOACH	
	17.	20060148622		2006-07-06	CHEN	
	18.	20130337981		2013-12-19	HABING	
	19.	20090036276		2009-02-05	LOACH	
	20.	20030032535		2003-02-13	WANG et al.	
	21.	20030181293	A1	2003-09-25	BAATZ	
	22.	20140235409	A1	2014-08-21	SALMON et al.	
	23.	20130303334	A1	2013-11-14	ADHAMI et al.	
	24.	20140357457	A1	2014-12-04	BOEKEMA	
	25.	20040102292	A1	2004-05-27	PYLES et al.	
	26.	20130090216	A1	2013-04-11	JACKSON	
	27.	2004/0043873	A1	2004-03-04	WILKINSON et al.	
	28.	20130123073	A1	2013-05-16	OLSON et al.	
	29.	20110009249	A1	2011-01-13	CAMPANARO et al.	
	30.	20110082013	A1	2011-04-07	BASTIAN	
	31.	20070232463	A1	2007-10-04	WU	
	32.	20150352396	A1	2015-12-10	DALEBOUT	
	33.	20190269958	A1	2019-09-02	DALEBOUT et al.	
	34.	20190151698	A1	2019-05-23	OLSON et al.	
	35.	20170266481	A1	2017-09-21	DALEBOUT	
	36.	20140371035	A1	2014-12-18	MORTENSEN et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	37.	20080119337	A1	2008-05-22	WILKINS et al.	
	38.	20060240955	A1	2006-10-26	PU	
	39.	20040176227	A1	2004-09-09	ENDELMAN	
	40.	20130065732	A1	2013-03-14	HOPP	
	41.	20050130814	A1	2005-06-16	NITTA et al.	
	42.	20150038300	A1	2016-02-05	FORHAN et al.	
	43.	20060252613	A1	2006-11-09	BARNES et al.	
	44.	20140187389	A1	2014-07-03	BERG	
	45.	20030176261	A1	2003-09-18	SIMONSON et al.	
	46.	20080051256	A1	2008-02-28	ASHBY et al.	
	47.	20100255965	A1	2010-10-07	CHEN	
	48.	20060035755	A1	2006-02-16	DALEBOUT et al.	
	49.	20040043873	A1	2004-03-04	WILKINSON et al.	
	50.	20150182779	A1	2015-07-02	DALEBOUT	
	51.	20180154205	A1	2018-06-07	WATTERSON	
	52.	20180154209	A1	2019-06-07	WATTERSON	
	53.	20070123395	A1	2007-05-31	ELLIS	
	54.	20130109543	A1	2013-05-02	REYES	
	55.	20020025888	A1	2002-02-28	GERMANTON	
	56.	20040204294		2004-10-14	WILLIAM WILKINSON	
	57.	20170266533		2017-09-21	WILLIAM T. DALEBOUT	
	58.	20190232112		2019-08-01	WILLIAM T. DALEBOUT	
	59.	20190376585		2019-12-12	DALE ALAN BUCHANAN	
	60.	20200009417		2020-01-09	WILLIAM T. DALEBOUT	
	61.	20200016459		2020-01-16	KENT M. SMITH	
	62.	20030171192	A1	2003-09-11	WU et al.	
	63.	20060035768	A1	2006-02-16	KOWALLIS et al.	
	64.	20110281691	A1	2011-11-17	ELLIS	
	65.	20080242511	A1	2008-10-02	MUNOZ	
	66.	20010016542		2001-08-23	YOSHIMURA	
	67.	20200338389		2020-10-29	DALEBOUT et al.	
	68.	20200254309		2020-08-13	WATTERSON	
	69.	20200254295		2020-08-13	WATTERSON	
	70.	20170319941		2017-11-09	SMITH et al.	
	71.	20160303453		2017-12-05	KIM	
	72.	20150306440		2015-10-29	BUCHER et al.	

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	73.	20200391069	A1	2020-12-17	Olson et al.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear	T ⁵
	1.	2007015096	WO	A3	2007-02-08	LOACH		
	2.	105848733	CN		2016-08-10	OLSON et al.		
	3.	3086865	EP	A1	2016-11-02	OLSON et al.		
	4.	2015/100429	WO		2015-07-02	OLSON et al.		
	5.	1533710	SU		1990-01-07	KONOPLYANKO		
	6.	1997006859	WO		1997-02-27	WALKER		
	7.	2969058	EP		2016-01-20	DALEBOUT et al.		
	8.	2014153158	WO		2014-09-25	DALEBOUT et al.		
	9.	10488413	CN		2015-09-02	DALEBOUT et al.		
	10.	1708333	CN		2005-12-14	GREENHOUSE INTERNATIONAL LLC		
	11.	1658929	CN		2005-08-24	ENGELBERT		
	12.	201516258	CN		2010-06-30	XIAOTAO YAN		
	13.	201410258y	CN		2014-02-24	CHANGZHOU QIANJING REHAB EQUIP		
	14.	2172137y	CN		1994-07-20	SHANGHI WUYUAN SCIENCE AND TE		
	15.	101784308	CN		2001-11-30	HARALD GRAB		
	16.	2002053234	WO	A1	2002-07-11	WILKINSON		
	17.	2013543749	JP		2013-12-09	HARRER		
	18.	2015191445	WO		2015-12-17	ICON HEALTH & FITNESS, INC.		
	19.	201601802	TW	A	2018-12-21	ICON HEALTH & FITNESS, INC.		
	20.	106470739	CN	B	2019-06-21	ICON HEALTH & FITNESS, INC.		
	21.	104884133	CN	B	2018-02-23	ICON HEALTH & FITNESS, INC.		
	22.	201821129	TW	A	2018-06-26	ICON HEALTH & FITNESS, INC.		
	23.	2018106603	WO		2018-06-14	ICON HEALTH & FITNESS, INC.		
	24.	110035801	CN		2019-07-19	ICON HEALTH & FITNESS, INC.		

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear	T ⁵
	25.	201821130	TW	A	2018-06-16	ICON HEALTH & FITNESS, INC.		
	26.	2018106598	WO		2018-06-14	ICON HEALTH & FITNESS, INC.		
	27.	1989002217	WO		1989-03-23	LINDSEY		
	28.	1188460	EP		2002-03-20	BRUNSWICK CORPORATION		
	29.	2291169Y	CN		1998-06-16	CHANG MACHINERY PLANCE WUJI		
	30.	M464203	TW		2013-11-01	YING LIAN HEALTH TECH CO., LTD.		
	31.	2841072Y	CN		2006-11-29	SHUANGYI RECREATION ARTICLES C		
	32.	103801048	CN		2014-05-21	SHENZHEN YUNDYUN TECHNOLOGY CO LTD.		
	33.	3086865	EP	A1	2020-01-22	ICON HEALTH & FITNESS, INC		
	34.	M495871	TW		2015-02-21	THING-YUAN CHANG		
	35.	2009/000059	WO		2008-12-31	ZIPTREK ECOTOURS INC.		
	36.	2009/014330	WO		2009-01-29	KIM		
	37.	3086865	EP		2020-02-03	ICON HEALTH & FITNESS INC.		
	38.	2969058	EP		2020-05-26	ICON HEALTH & FITNESS INC.		
	39.	3623020	EP		2020-03-23	ICON HEALTH & FITNESS INC.		
	40.	2002-011114	JP		2002-01-15	PANATTA SPORT SRL		

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ⁵
	1.	U.S. Provisional Patent Application No. 61/920,834 filed December 26, 2013, titled "Magnetic Resistance Mechanism in a Cable Machine", 31 pages	
	2.	Exxentric, Movie Archives, obtained from The Wayback Machine for http://exxentric.com/movies/ accessed for August 19, 2015.	
	3.	International Search Report & Written Opinion for PCT Application No. PCT/US2014/072390, dated March 27, 2015, 9 pages.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ⁵
	4.	Supplemental European Search Report for European Application No. 14874303, dated May 10, 2017, 6 pages	
	5.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petition for Inter Partes Review of U.S. Patent No. 9,403,047, filed May 5, 2017; 76 pages (paper 2)	
	6.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Olson, U.S. Patent 9,403,047, 16 pages, (Petition EX. 1001)	
	7.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Sleamaker, U.S. Patent 5,354,251, 14 pages, (Petition EX. 1002)	
	8.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Hanoun, U.S. Publication No. 2007-0232452, 28 pages, (Petition EX. 1003)	
	9.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Six-Pak, Printed Publication TuffStuff Fitness Six-Pak Trainer Owner's Manual, 19 pages, (Petition EX 1004)	
	10.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Ehrenfried, U.S. Patent No. 5,738,611, 19 pages, (Petition EX. 1005)	
	11.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Kleinman, International Publication No. WO2008/152627, 65 pages, (Petition EX. 1006)	
	12.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Lee Rawls, (Petition EX. 1007)	
	13.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, U.S. Patent No. 9,403,047 File history, 130 pages, (Petition EX. 1008)	
	14.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Provisional Patent Application No. 61/920,834, 38 pages, (Petition EX. 1009)	
	15.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Christopher Butler, 26 pages, (Petition EX. 1010)	
	16.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Power of Attorney, filed May 5, 2017, 2 pages (paper 2)	
	17.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Mandatory Notice to Patent Owner, filed May 19, 2017, 4 pages (paper 3)	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ⁵
	18.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Power of Attorney, filed May 19, 2017, 3 pages (paper 4)	
	19.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Notice of Accord Filing Date, filed June 9, 2017, 5 pages (paper 5)	
	20.	U.S. Provisional Patent Application No. 61/786,007 filed March 14, 2013, titled "Strength Training Apparatus with Flywheel and Related Methods ", 28 pages	
	21.	U.S. Provisional Patent Application No. 62/009,607 filed June 9, 2014, titled "Cable System Incorporated into a Treadmill", 32 pages.	
	22.	International Search Report & Written Opinion for PCT Application No. PCT/US2014/029353, dated August 4, 2014, 9 pages.	
	23.	Supplemental European Search Report for European Application No. 14768130, dated October 11, 2016, 9 pages	
	24.	U.S. Patent Application No. 15/472,954 filed March 29, 2017, titled "Strength Training Apparatus with Flywheel and Related Methods", 22 pages	
	25.	U.S. Patent Application No. 15/976,496 filed May 10, 2018, titled "Magnetic Resistance Mechanism in a Cable Machine", 36 pages	
	26.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petition for Inter Partes Review of U.S. Patent No. 9,616,276 (Claims 1-4, 7-10), filed May 5, 2017	
	27.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Dalebout et al., U.S. Patent 9,616,276, (Petition EX. 1001)	
	28.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Wu, U.S. Publication No. 20030171192, (Petition EX. 1002)	
	29.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Webb, U.S. Publication No. 20030017918, (Petition EX. 1003)	
	30.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Watson, U.S. Publication No. 20060234840, (Petition EX. 1004)	
	31.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Jones, U.S. Patent 4,798,378, (Petition EX. 1005)	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ⁵
	32.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Zhou et al., U.S. Patent 8,517,899, (Petition EX. 1006)	
	33.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Loach, U.S. Publication No. WO2007015096, (Petition EX. 1007)	
	34.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Rawls Declaration, Part 1 & 2, (Petition EX. 1008)	
	35.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, U.S. Patent No. 9,616,276 File History, (Petition EX. 1009)	
	36.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, U.S. Provisional Application No. 61/786,007 File History, (Petition EX. 1010)	
	37.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Sawicky, U.S. Patent No.5,042,798, (Petition EX. 1011)	
	38.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Power of Attorney, filed May 5, 2017	
	39.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Mandatory Notice to Patent Owner, filed May 19, 2017	
	40.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Power of Attorney, filed May 19, 2017	
	41.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Notice of Accord Filing Date, filed June 6, 2017	
	42.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petition for Inter Partes Review of U.S. Patent No. 9,616,276 (Claims 1-20) filed May 5, 2017	
	43.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Dalebout et al., U.S. Patent 9,616,276, (Petition EX. 1001)	
	44.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Wu, U.S. Publication No. 20030171192, (Petition EX. 1002)	
	45.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Webb, U.S. Publication No. 20030017918, (Petition EX. 1003)	

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NON PATENT LITERATURE DOCUMENTS

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	46.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Watson, U.S. Publication No. 20060234840, (Petition EX. 1004)	
	47.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Jones, U.S. Patent 4,798,378, (Petition EX. 1005)	
	48.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Zhou et al., U.S. Patent 8,517,899, (Petition EX. 1006)	
	49.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Loach, U.S. Publication No. WO2007015096, (Petition EX. 1007)	
	50.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Rawls Declaration, Part 1 & 2, (Petition EX. 1008)	
	51.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, U.S. Patent No. 9,616,276 File History, (Petition EX. 1009)	
	52.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, U.S. Provisional Application No. 61/786,007 File History, (Petition EX. 1010)	
	53.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Sawicky, U.S. Patent No.5,042,798, (Petition EX. 1011)	
	54.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Power of Attorney, filed May 5, 2017	
	55.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Mandatory Notice to Patent Owner, filed May 19, 2017	
	56.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Power of Attorney, filed May 19, 2017	
	57.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Notice of Accord Filing Date, filed June 6, 2017	
	58.	Chinese Office Action for Chinese Patent Application No. 201480003701.9 issued on April 6, 2016	
	59.	Chinese Search Report for Chinese Patent Application No. 2014800708329 issued on June 2, 2017	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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NON PATENT LITERATURE DOCUMENTS

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	60.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Declaration of Tyson Hottinger in Support of Motion for Admission PRO HAC VICE, filed February 1, 2018 (Ex 2001)	
	61.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Transcript of Deposition of R. Lee Rawls, filed March 5, 2018 (Ex 2002)	
	62.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order Conduct of Proceedings, filed May 7, 2018 (Paper 20)	
	63.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Decision Institution of Inter Partes Review, filed December 4, 2017 (Paper 6)	
	64.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Scheduling Order, filed December 4, 2017 (Paper 7)	
	65.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order, filed January 19, 2018 (Paper 8)	
	66.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Notice of Deposition of R. Lee Rawls, filed January 19, 2018 (Paper 9)	
	67.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Unopposed Motion for Pro Hac Vice Admission of Tyson Hottinger, filed February 1, 2018 (Paper 10)	
	68.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Current Exhibit List, filed February 1, 2018 (Paper 11)	
	69.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Updated Notice of Deposition of R. Lee Rawls, filed February 1, 2018 (Paper 12)	
	70.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Granting Motion of Pro Hac Vice Admission of Mr. Hottinger, filed February 12, 2018 (Paper 13)	
	71.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Mandatory Notices, filed February 20, 2018 (Paper 14)	
	72.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Power of Attorney, filed February 20, 2018 (Paper 15)	
	73.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Motion to Amend, filed March 5, 2018 (Paper 16)	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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NON PATENT LITERATURE DOCUMENTS

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	74.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List of Patent Owner, filed March 5, 2018 (Paper 17)	
	75.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, ORDER Conduct of Proceedings 37 C.F.R. Sec 42.5, filed April 27, 2018 (Paper 18)	
	76.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, ORDER Conduct of Proceedings 37 C.F.R. Sec 42.5, filed May 7, 2018 (Paper 19)	
	77.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Declaration of Tyson Hottinger in Support of Motion for Admission PRO HAC VICE, (Patent Owner EX. 2001)	
	78.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Claim Listing of Proposed Substitute Claims for Patent Owner Motion to Amend, (Patent Owner EX. 2002)	
	79.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of Patent No. 9,616,276, (Patent Owner EX. 2003)	
	80.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of Patent No. 9,616,276, (Patent Owner EX. 2004)	
	81.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of Patent No. 9,254,409 (Patent Owner EX. 2005)	
	82.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of Patent No. 9,254,409 (Patent Owner EX. 2006)	
	83.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Provisional Patent Specification of Application No. 61/786,007, (Patent Owner EX. 2007)	
	84.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Provisional Patent Drawings of Application No. 61/786,007, (Patent Owner EX. 2008)	
	85.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Specification of Application No. 13/754,361 (Patent Owner EX. 2009)	
	86.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Drawings of Application No. 13/754,361 (Patent Owner EX. 2010)	
	87.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Webster Dictionary pg. 2211 (Merriam-Webster, Inc. 1961, 2002) (EX. 3001)	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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NON PATENT LITERATURE DOCUMENTS

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	88.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner Preliminary Response to Petition, filed September 5, 2017 (Paper 6)	
	89.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Decision Institution of Inter Partes Review, filed December 4, 2017 (Paper 7)	
	90.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Scheduling Order, filed December 4, 2017 (Paper 8)	
	91.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, ORDER Conduct of Proceeding, filed January 19, 2018 (Paper 9)	
	92.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Notice of Deposition of R. Lee Rawls, filed January 19, 2018 (Paper 10)	
	93.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Unopposed Motion for PRO HAC VICE Admission of Tyson Hottinger, filed February 1, 2018 (Paper 11)	
	94.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List for Patent Owner, filed February 1, 2018 (Paper 12)	
	95.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Updated Notice of Deposition of R. Lee Rawls, February 1, 2018 (Paper 13)	
	96.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Granting Motion for PRO HAC VICE Admission, filed February 12, 2018 (Paper 14)	
	97.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Mandatory Notices, filed February 20, 2018 (Paper 15)	
	98.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Power of Attorney, filed February 20, 2018 (Paper 16)	
	99.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owners Motion to Amend, filed March 5, 2018 (Paper 17)	
	100.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed March 5, 2018 (Paper 18)	
	101.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, ORDER Conduct of Proceedings, filed April 27, 2018 (Paper 19)	

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NON PATENT LITERATURE DOCUMENTS

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	102.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, ORDER Conduct of Proceedings, filed May 7, 2018 (Paper 20)	
	103.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration of Tyson Hottinger in Support of Motion for Admission PRO HAC VICE, (Patent Owner EX. 2001)	
	104.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Claim Listing of Proposed Substitute Claims for Patent Owner Motion to Amend, (Patent Owner EX. 2002)	
	105.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of Patent Application No. 15/019,088, (Patent Owner EX. 2003)	
	106.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of Patent Application No. 15/019,088, (Patent Owner EX. 2004)	
	107.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of Patent Application No. 14/213,793, (Patent Owner EX. 2005)	
	108.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of Patent Application No. 14/213,793, (Patent Owner EX. 2006)	
	109.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of Provisional Patent Application No. 61/786,007, (Patent Owner EX. 2007)	
	110.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of Provisional Patent Application No. 61/786,007, (Patent Owner EX. 2008)	
	111.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Specification of Patent Application No. 13/754,361, (Patent Owner EX. 2009)	
	112.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Drawings of Patent Application No. 13/754,361, (Patent Owner EX. 2010)	
	113.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Webster Dictionary pg. 2211 (Merriam-Webster, Inc. 1961, 2002) (EX. 3001)	
	114.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Reply in Support of Petition for Inter Partes Review; filed 6/4/2018; 18 pages (paper 21)	
	115.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Motion for Pro Hac Vice Admission, filed 6/6/2018; 5 pages (paper 22)	

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NON PATENT LITERATURE DOCUMENTS

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	116.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Affidavit of Lane M. Polozola in support of Petitioner's Motion of Pro Hac Vice Admission Under 37 C.F.R. 42.10(c), filed 6/6/2018, 4 pages (exhibit 1011).	
	117.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order granting Motion for Pro Hac Vice Admission - 37 C.F.R. 42.10(c), filed 6/14/2018; 4 pages (paper 23)	
	118.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Mandatory Notices, filed 6/20/2018; 4 pages (paper 24)	
	119.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Power of Attorney, filed 6/20/2018; 3 pages (paper 25)	
	120.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Request for Oral Argument, filed 7/25/2018; 4 pages; (paper 26)	
	121.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Patent Owner's Request for Oral Argument, filed 7/25/2018; 4 pages (paper 27)	
	122.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order 37 C.F.R. 42.70, filed 8/14/2018, 5 pages (paper 28)	
	123.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Current Exhibit List of Patent Owner, filed 8/24/2018, 3 pages (paper 29)	
	124.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Order Conduct of Proceedings 37 C.F.R. 42.5, filed 8/24/2018, 4 pages (paper 30)	
	125.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Petitioner's Updated Exhibit List, filed 8/24/2018, 4 pages (paper 31)	
	126.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Petitioner's Oral Argument Demonstrative Exhibits, filed 8/24/2018, 31 pages (exhibit 1012)	
	127.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363; Patent Owner Demonstrative Exhibits; filed 8/24/2018, 10 pages (exhibit 2003)	
	128.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Motion for Pro Hac Vice Admission, filed 6/6/2018, 5 pages (paper 21)	
	129.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Objections to Evidence, filed 6/7/2018, 5 pages (paper 22)	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)				Application Number	17/115,699
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	130.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Notice of Deposition of Christopher Cox, filed 6/13/2018, 3 pages (paper 23)	
	131.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order - Granting Motion for Pro Hac Vice Admission, filed 6/14/2018, 4 pages (paper 24)	
	132.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Mandatory Notices, filed 6/20/2018, 4 pages, (paper 25)	
	133.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Updated Power of Attorney, filed 6/20/2018, 3 pages, (paper 26)	
	134.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Reply to Petitioners Opposition to Motions to Amend, filed 7/5/2018, 28 pages, (paper 27)	
	135.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List for Patent Owner, filed 7/5/2018, 4 pages, (paper 28)	
	136.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owners Updated Mandatory Notices, filed 7/5/2018, 4 pages, (paper 29)	
	137.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Notice of Deposition Scott Ganaja, filed 7/11/2018, 3 pages (paper 30)	
	138.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Joint Notice of Stipulation to Modify Scheduling Order, filed 7/12/2018, 3 pages, (paper 31)	
	139.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Objections to Evidence, filed 7/12/2018, 4 pages (paper 32)	
	140.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Amended Notice of Deposition Scott Ganaja, filed 7/12/2018, 3 pages (paper 33)	
	141.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of Proceeding 37 C.F.R. 42.5, filed 7/20/2018, 5 pages, (paper 34)	
	142.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Sur-Reply ISO Opposition to Motions to Amend, filed 8/1/2018, 19 pages, (paper 35)	
	143.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Joint Notice of Stipulation to Modify Scheduling Order, filed 8/3/2018, 3 pages (paper 36)	

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	144.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order Conduct of the Proceeding, filed 8/7/2018, 4 pages (paper 37)	
	145.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Objections to Petitioners Sur Reply, filed 8/8/2018, 5 pages (paper 38)	
	146.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Request for Oral Argument, filed 8/10/2018, 4 pages , (paper 39)	
	147.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Request for Oral Argument, filed 8/10/2018, 4 pages, (paper 40)	
	148.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Motion to Exclude Evidence, filed 8/10/2018, 11 pages (paper 41)	
	149.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order 37 C.F.R. 42.70, filed 8/14/2018, 5 pages (paper 42)	
	150.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Petitioner's Opposition to Patent Owner's Motion to Exclude, filed 8/16/2018, 18 pages (paper 44)	
	151.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Patent Owner's Reply in support of Motion to Exclude, filed 8/22/2018, 8 pages, (paper 45)	
	152.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Current Exhibit List of Patent Owner, filed 8/24/2018, 4 pages (paper 46)	
	153.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Order re PO Sur-Rebuttal at Hearing, filed 8/24/2018, 4 pages (paper 47)	
	154.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1012 - US8585561 (Watt), filed 6/4/2018, 32 pages	
	155.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1013 - US9044635 (Lull), filed 6/4/2018, 21 pages	
	156.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1014 - US7740563 (Dalebout), filed 6/4/2018, 31 pages	
	157.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1015 - US20020055418A1 (Pyles), filed 6/4/2018, 9 pages	

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	158.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1016 - US20120258433A1 (Hope), filed 6/4/2018, 51 pages	
	159.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1017 - US7771320 (Riley), filed 6/4/2018, 44 pages	
	160.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1018 – Declaration of Christopher Cox in Support of Petitioners Oppositions to Patent Owners Motions to Amend, filed 6/4/2018, 739 pages	
	161.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1019 – Affidavit of Lane M. Polozola in Support of Petitioners Motion for Pro Hac Vice Admission, filed 6/6/2018, 4 pages	
	162.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1020 - S. Ganaja Depo Transcript, filed 8/1/2018, 58 pages	
	163.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 1021 – Petitioner's Demonstrative Exhibits, filed 8/24/2018, 92 pages	
	164.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2011 – Declaration of Scott Ganaja in Support of Patent Owner's Reply to Petitioners Opposition to Patent Owners Motion to Amend, filed 7/5/2018, 42 pages	
	165.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2012 - Declaration of Richard Ferraro in Support of Patent Owner's Reply to Petitioners Opposition to Patent Owners Motion to Amend, filed 7/5/2018, 35 pages	
	166.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2013 - Cox, Christopher Depo Transcript 2018 06 26, filed 7/5/2018, 26 pages	
	167.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407, Exhibit 2014 - Patent Owner Demonstrative Exhibits, filed 8/24/2018, 21 pages	
	168.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Opposition to Patent Owner's Motion to Amend, filed 6/4/2018, 44 pages (paper 21)	
	169.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioners Motion for Pro Hac Vice Admission, filed 6/6/2018, 5 pages (paper 22)	
	170.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Objections to Evidence, filed 6/7/2018, 5 pages (paper 23)	
	171.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration R. Lee Rawls, Part 1, dated 5/12/2017, 447 pages, (paper 24)	

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	172.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Declaration R. Lee Rawls, Part 2, dated 5/12/2017, 216 pages, (paper 24)	
	173.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order granting Motion for Pro Hac Vice Admission, filed 6/14/2018, 4 pages (paper 25)	
	174.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Mandatory Notices, filed 6/20/2018, 4 pages, (paper 26)	
	175.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Power of Attorney, filed 6/20/2018, 3 pages, (paper 27)	
	176.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Reply to Opposition to Motions to Amend, filed 7/5/2018, 28 pages, (paper 28)	
	177.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed 7/5/2018, 4 pages, (paper 29)	
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	180.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Joint Notice of Stipulation to Modify Scheduling Order, filed 7/12/2018, 3 pages (paper 32)	
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	182.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Amended Notice of Deposition of Scott Ganaja, filed 7/12/2018, 3 pages, (paper 34)	
	183.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order – Conduct of the Proceeding, 37 C.F.R. 42.5, filed 7/20/2018, 5 pages (paper 35)	
	184.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Sur-Reply in Support of Opposition to Patent Owners Motions to Amend, filed 8/1/2018, 19 pages, (paper 36)	
	185.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Joint Notice of Stipulation to Modify Scheduling Order, filed 8/3/2018, 3 pages (paper 37)	

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	186.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order - Conduct of the Proceeding, 37 C.F.R. 42.5, filed 8/7/2018, 4 pages (paper 38)	
	187.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Objections to Petitioners Sur Reply, filed 8/2/2018, 5 pages, (paper 39)	
	188.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Request for Oral Argument, filed 8/10/2018, 4 pages, (paper 40)	
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	190.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owner's Motion to Exclude Evidence, filed 8/10/2018, 11 pages (paper 42)	
	191.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order – Oral Hearing 37 C.F.R. 42.70, filed 8/14/2018, 5 pages (paper 43)	
	192.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Opposition to Patent Owner's Motion to Exclude Evidence, filed 8/16/2018, 18 pages (paper 44)	
	193.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Patent Owners Reply in Support of its Motion to Exclude, filed 8/22/2018, 8 pages, (paper 46)	
	194.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Current Exhibit List of Patent Owner, filed 8/24/2018, 4 pages (paper 47)	
	195.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Order Conduct of the Proceedings – 37 C.F.R. 42.5, filed 8/24/2018, 4 pages, (paper 48)	
	196.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Petitioner's Updated Exhibit List, filed 8/24/2018, 5 pages, (paper 49)	
	197.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1012 - US8585561 (Watt), filed 6/4/2018, 32 pages	
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	201.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1016 - US20120258433A1 (Hope), filed 6/4/2018, 51 pages	
	202.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1017 - US7771320 (Riley), filed 6/4/2018, 44 pages	
	203.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1018 - Declaration of Christopher Cox in Support of Petitioners Oppositions to Patent Owners Motions to Amend, filed 6/4/2018, 739 pages	
	204.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1019 - Affidavit of Lane M. Polozola in Support of Petitioners Motion for Pro Hac Vice Admission, filed 6/6/2018, 4 pages	
	205.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1020 - Scott Ganaja Depo Transcript, filed 8/1/2018, 58 pages	
	206.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 1021 – Petitioner’s Demonstrative Exhibits, filed 8/24/2018, 92 pages	
	207.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2011 – Declaration of Scott Ganaja in Support of Patent Owner’s Reply to Petitioner’s Opposition to Patent Owner’s Motion to Amend, filed 7/5/2018, 42 pages	
	208.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2012 - Declaration of Richard Ferraro in Support of Patent Owner’s Reply to Petitioner’s Opposition to Patent Owner’s Motion to Amend, filed 7/5/2018, 35 pages	
	209.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2013 - Cox, Christopher Depo Transcript 2018 06 26, filed 7/5/2018, 26 pages	
	210.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01408, Exhibit 2014 - Patent Owner’s Demonstrative Exhibits, filed 8/24/2018, 21 pages	
	211.	European Patent Office, Article 94(3) EPC Communication dated July 10, 2018, issued in European Patent Application No. 14768130.8–1126, 3 pages.	
	212.	United States Patent and Trademark Office; International Search Report and Written Opinion issued in application no. PCT/US2015/034665; dated October 8, 2015 (14 pages)	
	213.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No’s. IPR2017-01363, IPR2017-01407, and IPR2017-01408 Record of Oral Hearing held August 29, 2018; (paper 32) 104 pages.	

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				Filing Date	12-08-2020
				First Named Inventor	Michael L. Olson
				Art Unit	3784
				Examiner Name	
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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ⁵
	214.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01407 – Petitioner's Updated Exhibit List, filed 8/24/2018, (paper 48) 5 pages	
	215.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No. IPR2017-01363, Final Written Decision dated November 28, 2018; (paper 33) 29 pages.	
	216.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No's. IPR2017-01407, Final Written Decision dated December 3, 2018; (paper 50) 81 pages.	
	217.	Nautilus, Inc. v. ICON Health & Fitness, Inc., Civil Case No's. IPR2017-01408, Final Written Decision dated December 3, 2018; (paper 51) 82 pages.	
	218.	United States Patent application no. 16/572,272; filed September 16, 2019, titled "Cable Exercise Machine", (35 pages)	
	219.	U.S. Provisional Patent Application No. 62/310,467 filed March 18, 2016, titled "Collapsible Strength Exercise Machine", 31 pages	
	220.	U.S. Provisional Patent Application No. 62/429,977 filed December 5, 2016, titled "Pull Cable Resistance Mechanism in a Treadmill", 37 pages	
	221.	U.S. Provisional Patent Application No. 62/429,970 filed December 5, 2016, titled "Tread Belt Locking Mechanism", 37 pages	
	222.	International Bureau of WIPO; International Preliminary Report on Patentability; Int'l App No. PCT/US2017/064523 dated June 11, 2019; 7 pages	
	223.	International Bureau of WIPO; International Preliminary Report on Patentability; Int'l App No. PCT/US2017/064536 dated June 11, 2019; 8 pages.	
	224.	Chinese Second Office Action for Chinese Patent Application No. 201480003701.9 issued on November 21, 2016	
	225.	Chinese Third Office Action for Chinese Patent Application No. 201480003701.9 issued on November 24, 2017	
	226.	Chinese Office Action for Chinese Patent Application No. 201580033332 issued on February 28, 2018	
	227.	Chinese Second Office Action for Chinese Patent Application No. 201580033332 issued on November 15, 2018	

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	228.	Nordic Track Fusion CST Series; website; located at: http://www.nordictrack.com/fusion-cst-series ; accessed on 1/24/2018; 11 pages.	
	229.	United States Provisional Patent Application No. 62/804,146, filed February 11, 2019, titled CABLE AND POWER RACK EXERCISE MACHINE, 49 pages.	
	230.	United States Patent Application No. 16/780,765, filed February 3, 2020, titled CABLE AND POWER RACK EXERCISE MACHINE, 48 pages.	
	231.	United States Patent Application No. 16/787,850, filed February 11, 2020, titled "EXERCISE MACHINE", 40 pages.	
	232.	International Patent Application No. PCT/US20/17710, filed February 11, 2020, titled "EXERCISE MACHINE", 41 pages.	
	233.	First Office Action and Search Report with English translation issued in Taiwan application 106135830 on June 15, 2018.	
	234.	United States Patent Application No. 16/742,762, filed January 14, 2020, titled CONTROLLING AN EXERCISE MACHINE USING A VIDEO WORKOUT PROGRAM, 146 pages.	
	235.	United States Patent Application No. 16/750,925, filed January 2, 2020, titled SYSTEMS AND METHODS FOR AN INTERACTIVE PEDALED EXERCISE DEVICE, 54 pages.	
	236.	United States Provisional Patent Application No. 62/914,007, filed October 11, 2019, titled MODULAR EXERCISE DEVICE, 128 pages.	
	237.	United States Provisional Patent Application No. 62/934,291, filed November 12, 2019, titled EXERCISE STORAGE SYSTEM, 41 pages.	
	238.	United States Provisional Patent Application No. 62/934,297, filed November 12, 2019, titled EXERCISE STORAGE SYSTEM, 44 pages.	
	239.	Extended European Search Report for European Application No. 17879180.2, dated June 9, 2020, 8 pages	
	240.	Chinese First Office Action for Application No. 201780074846.1 dated May 9, 2020	
	241.	International Search Report and Written Opinion dated August 20, 2020 issued in International Application No. PCT/US20/17710, 10 pages.	

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OFFICE ACTION / NOTICE OF ALLOWANCE / ISSUE NOTIFICATION DOCUMENTS				
Examiner Initials*	Cite No.	Application Number	Mail Date	Document
	1.			

EXAMINER SIGNATURE			
Examiner Signature		Date Considered	
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p> <p>¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached</p>			

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John T. Gadd/	Date (YYYY-MM-DD)	2021-01-08
Name/Print	John T. Gadd	Registration Number	52928

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
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4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

EXHIBIT 13

Doc code: IDS

Approved for use through 07/31/2012.

Doc description: Information Disclosure Statement (IDS) Filed

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,699
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	First Named Inventor	Michael L. Olson
	Art Unit	3784
	Examiner Name	
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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1	D286311		1986-10-21	Icon Ip, Inc.	
	2	D304849		1989-11-28	Icon Ip, Inc.	
	3	D306468		1990-03-06	Icon Ip, Inc.	
	4	D306891		1990-03-27	Icon Ip, Inc.	
	5	D307614		1990-05-01	Icon Ip, Inc.	
	6	D307615		1990-05-01	Icon Ip, Inc.	
	7	D309167		1990-07-10	Icon Ip, Inc.	
	8	D309485		1990-07-24	Icon Ip, Inc.	
	9	D310253		1990-08-28	Icon Ip, Inc.	
	10	D313055		1990-12-18	Icon Ip, Inc.	
	11	D315765		1991-03-26	Icon Ip, Inc.	
	12	D316124		1991-04-09	Icon Ip, Inc.	
	13	D318085		1991-07-09	Icon Ip, Inc.	
	14	D318086		1991-07-09	Icon Ip, Inc.	
	15	D318699		1991-07-30	Icon Ip, Inc.	
	16	D321388		1991-11-05	Icon Ip, Inc.	
	17	D323009		1992-01-07	Icon Ip, Inc.	
	18	D323198		1992-01-14	Icon Ip, Inc.	
	19	D323199		1992-01-14	Icon Ip, Inc.	
	20	D323863		1992-02-11	Icon Ip, Inc.	
	21	D326491		1992-05-26	Icon Ip, Inc.	
	22	D332347		1993-01-12	Icon Health & Fitness, Inc.	
	23	D335511		1993-05-11	Icon Ip, Inc.	
	24	D335905		1993-05-25	Icon Ip, Inc.	
	25	D336498		1993-06-15	Icon Ip, Inc.	
	26	D337361		1993-07-13	Icon Ip, Inc.	
	27	D337666		1993-07-27	Icon Ip, Inc.	
	28	D337799		1993-07-27	Icon Ip, Inc.	
	29	D342106		1993-12-07	Icon Ip, Inc.	
	30	D344112		1994-02-08	Icon Ip, Inc.	
	31	D344557		1994-02-22	Icon Ip, Inc.	
	32	D347251		1994-05-24	Icon Ip, Inc.	

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	33	D348493		1994-07-05	Icon Ip, Inc.	
	34	D348494		1994-07-05	Icon Ip, Inc.	
	35	D349931		1994-08-23	Icon Ip, Inc.	
	36	D351202		1994-10-04	Icon Ip, Inc.	
	37	D351435		1994-10-11	Icon Ip, Inc.	
	38	D351633		1994-10-18	Icon Ip, Inc.	
	39	D352534		1994-11-15	Icon Ip, Inc.	
	40	D353422		1994-12-13	Icon Ip, Inc.	
	41	D356128		1995-03-07	Icon Ip, Inc.	
	42	D360915		1995-08-01	Icon Ip, Inc.	
	43	D367689		1996-03-05	Icon Ip, Inc.	
	44	D370949		1996-06-18	Icon Ip, Inc.	
	45	D371176		1996-06-25	Icon Ip, Inc.	
	46	D380024		1997-06-17	Icon Health & Fitness, Inc.	
	47	D380509		1997-07-01	Icon Health & Fitness, Inc.	
	48	D384118		1997-09-23	Icon Health & Fitness, Inc.	
	49	D387825		1997-12-16	Icon Ip, Inc.	
	50	D392006		1998-03-10	Icon Health & Fitness, Inc.	
	51	D412953		1999-08-17	Icon Health & Fitness, Inc.	
	52	D413948		1999-09-14	Icon Health & Fitness, Inc.	
	53	D416596		1999-11-16	Icon Health & Fitness, Inc.	
	54	D425940		2000-05-30	Icon Ip, Inc.	
	55	D428949		2000-08-01	Icon Ip, Inc.	
	56	D450872		2001-11-20	Icon Health & Fitness, Inc.	
	57	D452338		2001-12-18	Icon Health & Fitness, Inc.	
	58	D453543		2002-02-12	Icon Health & Fitness, Inc.	
	59	D453948		2002-02-26	Icon Health & Fitness, Inc.	
	60	D507311		2005-07-12	Icon Health & Fitness, Inc.	
	61	D527776		2006-09-05	Icon Health & Fitness, Inc.	
	62	D588655		2009-03-17	Icon Health & Fitness, Inc.	
	63	D604373		2009-11-17	Icon Health & Fitness, Inc.	
	64	D635207		2011-03-29	Icon Health & Fitness, Inc.	
	65	D650451		2011-12-13	Icon Health & Fitness, Inc.	
	66	D652877		2012-01-24	Icon Health & Fitness, Inc.	

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	67	D659775		2012-05-15	Icon Health & Fitness, Inc.	
	68	D659777		2012-05-15	Icon Health & Fitness, Inc.	
	69	D660383		2012-05-22	Icon Health & Fitness, Inc.	
	70	D664613		2012-07-31	Icon Health & Fitness, Inc.	
	71	D671177		2012-11-20	Icon Health & Fitness, Inc.	
	72	D671178		2012-11-20	Icon Health & Fitness, Inc.	
	73	D673626		2013-01-01	Icon Health & Fitness, Inc.	
	74	D707763		2014-06-24	Icon Ip, Inc.	
	75	D712493		2014-09-02	Icon Health & Fitness, Inc.	
	76	D726476		2015-04-14	Icon Health & Fitness, Inc.	
	77	D731011		2015-06-02	Icon Health & Fitness, Inc.	
	78	D826350		2018-08-21	Icon Health & Fitness, Inc.	
	79	D827733		2018-09-04	Icon Health & Fitness, Inc.	
	80	D852292		2019-06-25	ICON Health & Fitness, Inc.	
	81	D864320		2016-05-10	ICON Health & Fitness, Inc.	
	82	D864321		2016-05-10	ICON Health & Fitness, Inc.	
	83	4023795		1977-05-17	Icon Health & Fitness, Inc.	
	84	4300760		1981-11-17	Icon Ip, Inc.	
	85	4413821		1983-11-08	Rocco Centafanti	
	86	4681318		1987-07-21	Icon Ip, Inc.	
	87	4684126		1987-08-04	Icon Ip, Inc.	
	88	4705028		1987-11-10	Phillip J. Melby	
	89	4728102		1988-03-01	Icon Ip, Inc.	
	90	4750736		1988-06-14	Icon Ip, Inc.	
	91	4796881		1989-01-10	Icon Ip, Inc.	
	92	4813667		1989-03-21	Icon Ip, Inc.	
	93	4830371		1989-05-16	Icon Ip, Inc.	
	94	4844451		1989-07-04	Icon Health & Fitness, Inc.	
	95	4850585		1989-07-25	Icon Ip, Inc.	
	96	4880225		1989-11-14	Icon Ip, Inc.	
	97	4883272		1989-11-28	Icon Ip, Inc.	
	98	4913396		1995-06-20	Dalebout et al.	
	99	4921242		1990-05-01	Icon Ip, Inc.	
	100	4932650		1990-06-12	Icon Ip, Inc.	

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	101	4938478		1990-07-03	Icon Ip, Inc.	
	102	4955599		1990-09-11	Icon Ip, Inc.	
	103	4971316		1990-11-20	Icon Ip, Inc.	
	104	4974832		1990-12-04	Icon Health & Fitness, Inc.	
	105	4979737		1990-12-25	Icon Health & Fitness, Inc.	
	106	4981294		1991-01-01	Icon Ip, Inc.	
	107	4998725		1991-03-12	Watterson et al.	
	108	5000443		1991-03-19	Icon Ip, Inc.	
	109	5000444		1991-03-19	Icon Ip, Inc.	
	110	5013033		1991-05-07	Icon Ip, Inc.	
	111	5014980		1991-05-14	Icon Health & Fitness, Inc.	
	112	5016871		1991-05-21	Icon Ip, Inc.	
	113	5029801		1991-07-09	Icon Health & Fitness, Inc.	
	114	5034576		1991-07-23	Icon Health & Fitness, Inc.	
	115	5058881		1991-10-22	Icon Ip, Inc.	
	116	5058882		1991-10-22	Icon Ip, Inc.	
	117	5062626		1991-11-05	Icon Ip, Inc.	
	118	5062627		1991-11-05	Proform Fitness Products, Inc.	
	119	5062632		1991-11-05	Icon Health & Fitness, Inc.	
	120	5062633		1991-11-05	Icon Health & Fitness, Inc.	
	121	5067710		1991-11-26	Watterson et al.	
	122	5072929		1991-12-17	Icon Ip, Inc.	
	123	5088729		1992-02-18	Icon Ip, Inc.	
	124	5090694		1992-02-25	Icon Ip, Inc.	
	125	5102380		1992-04-07	Icon Ip, Inc.	
	126	5104120		1992-04-14	Icon Health & Fitness, Inc.	
	127	5108093		1992-04-28	Icon Ip, Inc.	
	128	5122105		1992-06-16	Icon Health & Fitness, Inc.	
	129	5135216		1992-08-04	Bingham et al.	
	130	5135458		1992-08-04	Huang Chin C	
	131	5147265		1992-09-15	Icon Ip, Inc.	
	132	5149084		1992-09-22	Icon Ip, Inc.	
	133	5149312		1992-09-22	Harold B. Croft et al.	
	134	5158520		1992-10-27	Lemke William E	

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	135	5171196		1992-12-15	Icon Ip, Inc.	
	136	5190505		1993-03-02	Icon Ip, Inc.	
	137	5192255		1993-03-09	Dalebout et al.	
	138	5195937		1993-03-23	Icon Ip, Inc.	
	139	5203826		1993-04-20	Icon Ip, Inc.	
	140	5217487		1993-06-08	Icon Health & Fitness, Inc.	
	141	5226866		1993-07-13	Icon Ip, Inc.	
	142	5242339		1993-09-07	William E. Thornton	
	143	5244446		1993-09-14	Icon Ip, Inc.	
	144	5247853		1993-09-28	Icon Ip, Inc.	
	145	5259611		1993-11-09	Icon Ip, Inc.	
	146	5279528		1994-01-18	Dalebout et al.	
	147	5282776		1994-02-01	Dalebout	
	148	5295931		1994-03-22	Icon Ip, Inc.	
	149	5302161		1994-04-12	Icon Ip, Inc.	
	150	5316534		1994-05-31	Dalebout et al.	
	151	5328164		1994-07-12	Icon Health & Fitness, Inc.	
	152	5336142		1994-08-09	Icon Ip, Inc.	
	153	5372559		1994-12-13	Dalebout et al.	
	154	5374228		1994-12-20	Icon Ip, Inc.	
	155	5382221		1995-01-17	Icon Health & Fitness, Inc.	
	156	5385520		1995-01-31	James J. Lepine	
	157	5387168		1995-02-07	Nordictrack, Inc.	
	158	5393690		1995-02-28	Icon Health & Fitness, Inc.	
	159	5429563		1995-07-04	Icon Ip, Inc.	
	160	5431612		1995-07-11	Icon Ip, Inc.	
	161	5468205		1995-11-21	McFall et al.	
	162	5489249		1996-02-06	Brewer et al.	
	163	5492517		1996-02-20	Icon Ip, Inc.	
	164	5511740		1996-04-30	Icon Health & Fitness, Inc.	
	165	5512025		1996-04-30	Dalebout et al.	
	166	5529553		1996-06-26	Kurt E. Finlayson	
	167	5540429		1996-07-30	Icon Ip, Inc.	
	168	5549533		1996-08-27	Icon Ip, Inc.	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	169	5554085		1996-09-10	Dalebout	
	170	5569128		1996-10-29	Dalebout	
	171	5591105		1997-01-07	Icon Ip, Inc.	
	172	5591106		1997-01-07	Icon Ip, Inc.	
	173	5595556		1997-01-21	Dalebout et al.	
	174	5607375		1997-03-04	Dalebout; William T.	
	175	5611539		1997-03-18	Wattersk Scott R. Watterson	
	176	5622527		1997-04-22	Icon Ip, Inc.	
	177	5626538		1997-05-06	Icon Ip, Inc.	
	178	5626540		1997-05-06	Raymond F. Hall	
	179	5626542		1997-05-06	Icon Health & Fitness, Inc.	
	180	5637059		1997-06-10	Icon Ip, Inc.	
	181	5643153		1997-07-01	Icon Ip, Inc.	
	182	5645509		1997-07-08	Brewer et al.	
	183	5662557		1997-09-02	Watterson et al.	
	184	5667461		1997-09-16	Raymond F. Hall	
	185	5669857		1997-09-23	Watterson et al.	
	186	5672140		1997-09-30	Watterson et al.	
	187	5674156		1997-10-07	Watterson et al.	
	188	5674453		1997-10-07	Watterson et al.	
	189	5676624		1997-10-14	Watterson et al.	
	190	5683331		1997-11-04	Icon Ip, Inc.	
	191	5683332		1997-11-04	Watterson et al.	
	192	5695433		1997-12-09	Icon Ip, Inc.	
	193	5695434		1997-12-09	Icon Health & Fitness, Inc.	
	194	5695435		1997-12-09	Watterson et al.	
	195	5702325		1997-12-30	Watterson et al.	
	196	5704879		1998-01-06	Watterson et al.	
	197	5718657		1998-02-17	William T. Dalebout et al.	
	198	5720200		1998-02-24	Anderson et al.	
	199	5720698		1998-02-24	Icon Ip, Inc.	
	200	5722922		1998-03-03	Watterson et al.	
	201	5733229		1998-03-31	Dalebout et al.	
	202	5743833		1998-04-28	Watterson et al.	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	203	5762584		1998-06-09	John J. Daniels	
	204	5762587		1998-06-09	Icon Health & Fitness, Inc.	
	205	5772560		1998-06-30	Watterson et al.	
	206	5810698		1998-09-22	Hullett et al.	
	207	5827155		1998-10-27	Jon F. Jensen	
	208	5830114		1998-11-03	Icon Ip, Inc.	
	209	5860893		1999-01-19	Watterson et al.	
	210	5860894		1999-01-19	Dalebout et al.	
	211	5899834		1999-05-04	Dalebout et al.	
	212	5921892		1999-07-13	Easton	
	213	5951441		1999-09-14	William T. Dalebout	
	214	5951448		1999-09-14	Icon Health & Fitness, Inc.	
	215	6003166		1999-12-21	Icon Ip, Inc.	
	216	6019710		2000-02-01	Icon Health & Fitness, Inc.	
	217	6027429		2000-02-22	Daniels	
	218	6033347		2000-03-07	William T. Dalebout et al.	
	219	6059692		2000-05-09	Paul L. Hickman	
	220	6113519		2000-09-05	Moriki Goto	
	221	6123646		2000-09-26	Icon Health & Fitness, Inc.	
	222	6171217		2001-01-09	Icon Ip, Inc.	
	223	6171219		2001-01-09	Roy Simonson	
	224	6174267		2001-01-16	William T. Dalebout	
	225	6193631		2001-02-27	Paul L. Hickman	
	226	6228003		2001-05-08	Hald et al.	
	227	6238323		2001-05-29	Simonson	
	228	6251052		2001-06-26	Roy Simonson	
	229	6261022		2001-07-17	William T. Dalebout et al.	
	230	6280362		2001-08-28	William T. Dalebout et al.	
	231	6296594		2001-10-02	Roy Simonson	
	232	6312363		2001-11-06	Watterson et al.	
	233	6350218		2002-02-26	William T. Dalebout et al.	
	234	6387020		2002-05-14	Roy Simonson	
	235	6413191		2002-07-02	Icon Health & Fitness, Inc.	
	236	6422980		2002-07-23	Roy Simonson	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	237	6447424		2002-09-10	Darren C. Ashby et al.	
	238	6458060		2002-10-01	Watterson et al.	
	239	6458061		2002-10-01	Roy Simonson	
	240	6471622		2002-10-29	Hammer et al.	
	241	6506142		2003-01-14	Tomoya Itoh	
	242	6527678		2003-03-04	Wang, Leao	
	243	6547698		2003-04-15	Yasushi Inagawa	
	244	6563225		2003-05-13	Icon Health & Fitness	
	245	6601016		2003-07-29	Brown et al.	
	246	6623140		2003-09-23	Scott R. Watterson	
	247	6626799		2003-09-30	Watterson et al.	
	248	6652424		2003-11-25	William T. Dalebout	
	249	6685607		2004-02-03	Olson	
	250	6695581		2004-02-24	Icon Health & Fitness, Inc.	
	251	6701271		2004-03-02	Willner et al.	
	252	6702719		2004-03-09	Brown et al.	
	253	6712740		2004-03-30	Simonson	
	254	6719667		2004-04-13	Wong, Philip Lim-Kong	
	255	6730002		2004-05-04	Hald et al.	
	256	6743153		2004-06-01	Watterson et al.	
	257	6749537		2004-06-15	Hickman Paul L	
	258	6761667		2004-07-13	Gordon L. Cutler et al.	
	259	6770015		2004-08-03	Roy Simonson	
	260	6783482		2004-08-31	Gary E. Oglesby	
	261	6786852		2004-09-07	Watterson et al.	
	262	6796925		2004-09-28	Martha Z. Martinez	
	263	6808472		2004-10-26	Paul L. Hickman	
	264	6821230		2004-11-23	Dalebout et al.	
	265	6830540		2002-08-01	Watterson Scott R.	
	266	6863641		2005-03-08	Brown et al.	
	267	6866613		2005-03-15	Brown et al.	
	268	6875160		2005-04-05	Icon Ip, Inc.	
	269	6878101		2005-04-12	George Colley	
	270	6918858		2005-07-19	Watterson et al.	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	271	6921351		2005-07-26	Hickman et al.	
	272	6974404		2005-12-13	Watterson et al.	
	273	6997852		2006-02-14	Watterson et al.	
	274	7025713		2006-04-11	Dalebout William T.	
	275	7044897		2006-05-16	Myers et al.	
	276	7052442		2006-05-30	Watterson Scott R.	
	277	7060006		2006-06-13	Watterson et al.	
	278	7060008		2006-06-13	Scott R. Watterson et al.	
	279	7070539		2006-07-04	Michael Wayne Brown et al.	
	280	7070542		2006-07-04	Javier Reyes	
	281	7097588		2006-08-29	Scott Watterson	
	282	7112168		2006-09-26	William T. Dalebout et al.	
	283	7125369		2006-10-24	Ken Endelman	
	284	7128693		2006-10-31	Brown et al.	
	285	7132939		2006-11-07	Patrick Tyndall	
	286	7153240		2006-12-26	Hung-Sheng Wu	
	287	7166062		2007-01-23	Watterson et al.	
	288	7166064		2007-01-23	Watterson et al.	
	289	7169087		2007-01-30	Icon Health & Fitness, Inc.	
	290	7169093		2007-01-30	Simonson et al.	
	291	7172536		2007-02-06	Wei Liu	
	292	7192387		2007-03-20	Israel Mendel	
	293	7192388		2007-03-20	Dalebout et al.	
	294	7250022		2007-07-31	Dalebout William T	
	295	7282016		2007-10-16	Simonson	
	296	7285075		2007-10-23	Cutler et al.	
	297	7344481		2008-03-18	Watterson et al.	
	298	7377882		2008-05-27	Watterson Scott R	
	299	7425188		2008-09-16	Gaylen Ercanbrack	
	300	7429236		2008-09-30	Dalebout et al.	
	301	7452311		2008-11-18	Neal Barnes	
	302	7455622		2008-11-25	Watterson et al.	
	303	7470219		2008-12-30	Cadmar Larson	
	304	7482050		2009-01-27	Olson	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	305	7510509		2009-03-31	Hickman	
	306	7537546		2009-05-26	Watterson et al.	
	307	7537549		2009-05-26	Nelson et al.	
	308	7537552		2009-05-26	Dalebout et al.	
	309	7549947		2009-06-23	Watterson et al.	
	310	7556590		2009-07-07	Scott R. Watterson et al.	
	311	7563203		2009-07-21	Dalebout et al.	
	312	7575536		2009-08-18	Paul L. Hickman	
	313	7578771		2009-08-25	Towley III et al.	
	314	7601105		2009-10-13	Gipson, III et al.	
	315	7604573		2009-10-20	Icon Ip, Inc.	
	316	7618350		2009-11-17	Icon Ip, Inc.	
	317	7618357		2009-11-17	William T. Dalebout	
	318	7625315		2009-12-01	Hickman	
	319	7625321		2009-12-01	Simonson et al.	
	320	7628730		2009-12-08	Watterson et al.	
	321	7628737		2009-12-08	Kowallis et al.	
	322	7637847		2009-12-29	Paul L. Hickman	
	323	7645212		2010-01-12	Ashby et al.	
	324	7645213		2010-01-12	Watterson Scott R	
	325	7658698		2010-02-09	Icon Ip, Inc.	
	326	7674205		2010-03-09	Icon Ip, Inc.	
	327	7713171		2010-05-11	Hickman	
	328	7713172		2010-05-11	Watterson et al.	
	329	7713180		2010-05-11	Krista Marie Wickens	
	330	7717828		2010-05-18	Icon Ip, Inc.	
	331	7736279		2010-06-15	Icon Ip, Inc.	
	332	7749144		2010-07-06	Rodney Hammer	
	333	7766797		2010-08-03	Dalebout William T	
	334	7771320		2010-08-10	Raymond W. Riley	
	335	7771329		2010-08-10	Dalebout et al.	
	336	7775940		2010-08-17	Icon Ip, Inc.	
	337	7789800		2010-09-07	Watterson et al.	
	338	7798946		2010-09-21	Dalebout et al.	

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	339	7806589		2010-10-05	Scott Tashman	
	340	7815548		2010-10-19	Lara Barre	
	341	7815550		2010-10-19	Watterson et al.	
	342	7857731		2010-12-28	Hickman et al.	
	343	7862475		2011-01-04	Scott Watterson	
	344	7862478		2011-01-04	Watterson et al.	
	345	7862483		2011-01-04	Hendrickson et al.	
	346	7862489		2011-01-04	Zdenko Savsek	
	347	7887470		2011-02-15	I-Huang Chen	
	348	7901324		2011-03-08	Masato Kodama	
	349	7901330		2011-03-08	Icon Ip, Inc.	
	350	7909740		2011-03-22	Icon Ip, Inc.	
	351	7980996		2011-07-19	Hickman	
	352	7981000		2011-07-19	Watterson et al	
	353	7985164		2011-07-26	Ashby	
	354	8007409		2011-08-30	Joseph K. Ellis	
	355	8029415		2011-10-04	Darren C. Ashby et al.	
	356	8033960		2011-10-11	Dalebout et al.	
	357	8075453		2011-12-13	William T. Wilkinson	
	358	8152702		2012-04-10	Pacheco	
	359	8157708		2012-04-17	Juliette C. Daly	
	360	8251874		2012-08-28	Ashby et al.	
	361	8257232		2012-09-04	Thierry Albert	
	362	8298123		2012-10-30	Hickman	
	363	8298125		2012-10-30	Colledge et al.	
	364	8308618		2012-11-13	Douglas G. Bayerlein	
	365	8608624		2013-12-17	Dmitry Shabodyash	
	366	8690735		2014-04-08	Watterson et al.	
	367	8740753		2014-06-03	Olson et al.	
	368	8747285		2014-06-10	Georg Hof	
	369	8758201		2014-06-24	Ashby et al.	
	370	8771153		2014-07-08	Dalebout et al.	
	371	8784270		2014-07-22	Scott R. Watterson	
	372	8784275		2014-07-22	Jeffrey Mikan	

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	373	8784278		2014-07-22	Anson FLAKE	
	374	8808148		2014-08-19	Scott Watterson	
	375	8814762		2014-08-26	Jaremy Butler	
	376	8840075		2014-09-23	Michael Olson	
	377	8845493		2014-09-30	Watterson et al.	
	378	8870726		2014-10-28	Scott R. Watterson et al.	
	379	8876668		2014-11-04	Hendrickson et al.	
	380	8894549		2014-11-25	Icon Health & Fitness, Inc.	
	381	8894555		2014-11-25	Michael L. Olson	
	382	8911330		2014-12-16	Watterson et al.	
	383	8920288		2014-12-30	William Dalebout	
	384	8920347		2014-12-30	Douglas G. Bayerlein	
	385	8979709		2015-03-17	Paul Toback	
	386	8986165		2015-03-24	Ashby	
	387	8992364		2015-03-31	Icon Health & Fitness, Inc.	
	388	8992387		2015-03-31	Watterson et al.	
	389	9028368		2015-05-12	Ashby et al.	
	390	9028370		2015-05-12	Scott R. Watterson	
	391	9039578		2015-05-26	Dalebout	
	392	9072930		2015-07-07	Ashby et al.	
	393	9119983		2015-09-01	Rhea	
	394	9119988		2015-09-01	Brian Murray	
	395	9123317		2015-09-01	Watterson et al.	
	396	9126071		2015-09-08	Kent M. Smith	
	397	9126072		2015-09-08	Watterson	
	398	9138615		2015-09-22	Olson et al.	
	399	9142139		2015-09-22	Watterson et al.	
	400	9144703		2015-09-29	Dalebout et al.	
	401	9149683		2015-09-08	Kent M. Smith	
	402	9186535		2015-11-17	Gaylen Ercanbrack	
	403	9186549		2015-11-17	Watterson et al.	
	404	9186552		2015-11-17	Therese Deal	
	405	9227101		2016-01-05	Anthony Maguire	
	406	9233272		2016-01-12	Anthony J. Villani	

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	407	9254416		2016-02-09	Darren C. Ashby	
	408	9278248		2016-03-08	Michael J. Tyger	
	409	9278249		2016-03-08	Icon Health & Fitness, Inc.	
	410	9278250		2016-03-08	Icon Health & Fitness, Inc.	
	411	9289648		2016-03-22	Watterson	
	412	9292935		2016-03-22	Koduri et al.	
	413	9308417		2016-04-12	Richard Grundy	
	414	9339683		2016-05-17	Dave Dilli	
	415	9339691		2016-05-17	Brammer	
	416	9352185		2016-05-31	Hendrickson et al.	
	417	9352186		2016-05-31	Watterson	
	418	9364714		2016-06-14	Koduri et al.	
	419	9375605		2016-06-28	Michael J. Tyger	
	420	9378336		2016-06-28	Peter Ohnemus	
	421	9381394		2016-07-05	Icon Health & Fitness, Inc.	
	422	9387387		2016-07-12	Dalebout	
	423	9393453		2016-07-19	Watterson	
	424	9403051		2016-08-02	Gordon Cutler	
	425	9421416		2016-08-23	Icon Health & Fitness, Inc.	
	426	9457219		2016-10-04	Smith	
	427	9457220		2016-10-04	Olson	
	428	9457222		2016-10-04	Icon Health & Fitness, Inc.	
	429	9460632		2016-10-04	Scott R. Watterson	
	430	9463356		2016-10-11	Matthew Rhea	
	431	9468794		2016-10-18	Icon Health & Fitness, Inc.	
	432	9468798		2016-10-18	William T. Dalebout	
	433	9480874		2016-11-01	Cutler	
	434	9492704		2016-11-15	Mortensen et al.	
	435	9498668		2016-11-22	Smith	
	436	9517378		2016-12-13	Ashby et al.	
	437	9521901		2016-12-20	Dalebout	
	438	9533187		2017-01-03	Dalebout	
	439	9539461		2017-01-10	Ercanbrack	
	440	9550091		2017-01-24	Brandon C. Emerson	

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	Attorney Docket Number	I1618.10052US08

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	441	9579544		2017-02-28	Watterson	
	442	9586086		2017-03-07	Icon Health & Fitness, Inc.	
	443	9586090		2017-03-07	Watterson et al.	
	444	9604099		2017-03-28	Icon Health & Fitness, Inc.	
	445	9616278		2017-04-11	Michael L. Olson	
	446	9623281		2017-04-18	Rick W. Hendrickson	
	447	9636567		2017-05-02	Brammer et al.	
	448	9675839		2017-06-13	Willism T. Dalebout	
	449	9682307		2017-06-20	Dalebout	
	450	9694234		2017-07-04	Dalebout et al.	
	451	9694242		2017-07-04	Darren C. Ashby	
	452	9737755		2017-08-22	Dalebout	
	453	9750454		2017-09-05	Fabian Walke	
	454	9764186		2017-09-19	William T. Dalebout	
	455	9767785		2017-09-19	Darren C. Ashby	
	456	9776032		2017-10-03	Thomas H. Moran	
	457	9795822		2017-10-24	Smith et al.	
	458	9795855		2017-10-24	Kiarash Jafarifesharaki	
	459	9808672		2017-11-07	William T. Dalebout	
	460	9849326		2017-12-26	Kent M. Smith	
	461	9878210		2018-01-30	Scott R. Watterson	
	462	9889334		2018-02-13	Ashby et al.	
	463	9889339		2018-02-13	Melanie Douglass	
	464	9937376		2018-04-10	Icon Health & Fitness, Inc.	
	465	9937377		2018-04-10	Icon Health & Fitness, Inc.	
	466	9937378		2018-04-10	Icon Health & Fitness, Inc.	
	467	9937379		2018-04-10	Nathan Mortensen	
	468	9943719		2018-04-17	Smith et al.	
	469	9943722		2018-04-17	William T. Dalebout	
	470	9948037		2018-04-17	Darren C. Ashby	
	471	9968821		2018-05-15	Icon Health & Fitness, Inc.	
	472	9968823		2018-05-15	Cutler	
	473	9980465		2018-05-29	Akio Hayashi	
	474	10010755		2018-07-03	Eric Watterson	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,699
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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	475	10010756		2018-07-03	Eric S. Watterson	
	476	10029145		2018-07-24	Melanie Douglass	
	477	10046196		2018-08-14	Gaylen Ercanbrack	
	478	10065064		2018-09-04	ICON Health & Fitness, Inc.	
	479	10071285		2018-09-11	Smith et al.	
	480	10085586		2018-10-02	Smith et al.	
	481	10086254		2018-10-02	ICON Health & Fitness, Inc.	
	482	10118064		2018-11-06	William T. Cox	
	483	10136842		2018-11-27	Icon Health & Fitness, Inc.	
	484	10186161		2019-01-22	Eric C. Watterson	
	485	10207143		2019-02-19	William T. Dalebout	
	486	10207145		2019-02-19	Michael J. Tyger	
	487	10207147		2019-02-19	Gaylen Ercanbrack	
	488	10207148		2019-02-19	Wade A. Powell	
	489	10212994		2019-02-26	Scott R. Watterson	
	490	10220259		2019-03-05	Chase Brammer	
	491	10226396		2019-03-12	Darren Ashby	
	492	10226664		2019-03-12	William T. Dalebout	
	493	10252109		2019-04-09	Watterson	
	494	10272317		2019-04-30	Watterson	
	495	10343017		2019-07-09	ICON Health & Fitness, Inc.	
	496	10376736		2019-08-13	ICON Health & Fitness, Inc.	
	497	10449416		2019-10-22	William T. Dalebout	

U.S. PATENT APPLICATION PUBLICATIONS						
Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1	20020016235		2002-02-07	Icon Ip, Inc.	
	2	20020077221		2002-06-20	Icon Ip, Inc.	
	3	20020128127		2002-09-12	James Chen	
	4	20020159253		2002-10-31	Icon Ip, Inc.	
	5	20030171189		2003-09-11	Kaufman	
	6	20040091307		2004-05-13	Icon Ip, Inc.	
	7	20040171464		2004-09-02	Ashby et al.	

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	8	20040171465		2004-09-02	Icon Ip, Inc.	
	9	20050049123		2005-03-03	Icon Ip, Inc.	
	10	20050077805		2005-04-14	Icon Ip, Inc.	
	11	20050107229		2005-05-19	Icon Ip, Inc.	
	12	20050164839		2005-07-28	Icon Ip, Inc.	
	13	20050272577		2005-12-08	Icon Ip, Inc.	
	14	20050277520		2005-12-15	Richard Van Waes	
	15	20060135322		2006-06-22	Debra Rocker	
	16	20060217237		2006-09-28	Jeffrey Rhodes	
	17	20060240959		2006-10-26	Hsien-Ting Huang	
	18	20070066448		2007-03-22	Francis Pan	
	19	20070117683		2007-05-24	Icon Ip, Inc.	
	20	20070197353		2007-08-23	Hundley, Kenneth W.	
	21	20070254778		2007-11-01	ICON Health and Fitness Inc	
	22	20080242520		2008-10-02	Icon Health & Fitness, Inc.	
	23	20080300110		2008-12-04	Icon, Ip	
	24	20090105052		2009-04-23	Icon Ip, Inc.	
	25	20100242246		2010-09-30	Icon Ip, Inc.	
	26	20100317488		2010-12-16	Jose Cartaya	
	27	20110131005		2008-09-16	Hiromu Ueshima	
	28	20120237911		2012-09-20	Mark Watterson	
	29	20120295774		2012-11-22	Dalebout et al.	
	30	20130014321		2013-01-17	Kirk Sullivan	
	31	20130123083		2013-05-16	Sip	
	32	20130165195		2013-06-27	Watterson	
	33	20130172152		2013-07-04	Scott R. Watterson	
	34	20130172153		2013-07-04	Scott R. Watterson	
	35	20130178334		2013-07-11	Brammer	
	36	20130178768		2013-07-11	William Dalebout	
	37	20130190136		2013-07-25	Watterson	
	38	20130196298		2013-08-01	Scott R. Watterson	
	39	20130196822		2013-08-01	Watterson et al.	
	40	20130218585		2013-08-22	Mark Watterson	
	41	20130244836		2013-09-19	Traci Jo Maughan	

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	42	20130267383		2013-10-10	Scott R. Watterson	
	43	20130268101		2013-10-10	Chase Brammer	
	44	20130274067		2013-10-17	Watterson et al.	
	45	20130281241		2013-10-24	Scott R. Watterson	
	46	20140024499		2014-01-23	Icon Health & Fitness, Inc.	
	47	20140073970		2014-03-13	Darren C. Ashby	
	48	20140121071		2014-05-01	Icon Health & Fitness, Inc.	
	49	20140135173		2014-05-15	Watterson	
	50	20140274574		2014-09-18	Shorten et al.	
	51	20140274579		2014-09-18	Olson	
	52	20140287884		2014-09-25	Dale Alan Buchanan	
	53	20140309085		2014-10-16	Watterson et al.	
	54	20150182781		2015-07-02	Icon Health & Fitness, Inc.	
	55	20150238817		2015-08-27	Scott R. Watterson	
	56	20150250418		2015-09-10	Darren C. Ashby	
	57	20150251055		2015-09-10	Darren C. Ashby	
	58	20150253210		2015-09-10	Ashby et al.	
	59	20150253735		2015-09-10	Scott R. Watterson	
	60	20150253736		2015-09-10	Scott R. Watterson	
	61	20150258560		2015-09-17	Darren C. Ashby	
	62	20150367161		2015-12-24	Andrew Richard Wiegardt	
	63	20160058335		2016-03-03	Darren C. Ashby	
	64	20160063615		2016-03-03	Watterson	
	65	20160092909		2016-03-31	Eric S. Watterson	
	66	20160101311		2016-04-14	Workman	
	67	20160107065		2016-04-21	Chase Brammer	
	68	20160121074		2018-07-03	Darren C. Ashby	
	69	20160148535		2016-05-26	Ashby	
	70	20160148536		2016-05-26	Ashby	
	71	20160158595		2016-06-09	William T. Dalebout	
	72	20160206248		2016-07-21	Sartor et al.	
	73	20160206922		2016-07-21	Dalebout et al.	
	74	20160250519		2016-09-01	Watterson	
	75	20160253918		2016-09-01	Watterson	

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	76	20160339298		2016-11-24	Gennadiy Kats	
	77	20160346595		2016-12-01	Icon Health & Fitness, Inc.	
	78	20160346617		2016-12-01	Srugo et al.	
	79	20170036053		2017-02-09	ICON Health & Fitness, Inc.	
	80	20170056711		2017-03-02	Dalebout et al.	
	81	20170056715		2017-03-02	William T. Dalebout et al.	
	82	20170056726		2017-03-02	Dalebout et al.	
	83	20170124912		2017-05-04	ICON Health & Fitness, Inc.	
	84	20170193578		2017-07-06	Watterson	
	85	20170266483		2017-09-21	Dalebout et al.	
	86	20170266489		2017-09-21	ICON Health & Fitness, Inc.	
	87	20170266532		2017-09-21	Eric S. Watterson	
	88	20170270820		2017-09-21	Ashby	
	89	20180001135		2018-01-04	Powell	
	90	20180036585		2018-02-08	Powell	
	91	20180084817		2018-03-29	Capell et al.	
	92	20180085630		2018-03-29	Capell et al.	
	93	20180089396		2018-03-29	Capell et al.	
	94	20180099116		2018-04-12	Ashby	
	95	20180099179		2018-04-12	Chatterton et al.	
	96	20180099180		2018-04-12	Wilkinson	
	97	20180099205		2018-04-12	Watterson	
	98	20180111034		2018-04-26	Watterson	
	99	20180117383		2018-05-03	Icon Health & Fitness, Inc.	
	100	20180117385		2018-05-03	Watterson et al.	
	101	20180117393		2018-05-03	ICON Health & Fitness, Inc.	
	102	20180154207		2018-06-07	Ryan Hochstrasser	
	103	20180154208		2018-06-07	Wade A. Powell et al.	
	104	20180200566		2018-07-19	Jared Weston	
	105	20190058370		2019-02-21	Evan Charles Tinney	
	106	20190080624		2019-03-14	Eric C. Watterson	
	107	20190168072		2019-06-06	Chase Brammer	
	108	20190178313		2019-06-13	David Wrobel	
	109	20190192898		2019-06-27	William T. Dalebout	

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Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	110	20190192952		2019-06-27	Wade A. Powell	
	111	20190209893		2019-07-11	Scott R. Watterson	
	112	20190223612		2019-07-25	Scott R. Watterson	
	113	20190269971		2019-09-05	ICON Health & Fitness, Inc.	
	114	20190275366		2019-09-12	ICON Health & Fitness, Inc.	
	115	20190282852		2019-09-19	William T. Dalebout	
	116	20190328079		2019-10-31	ICON Health & Fitness, Inc.	
	117	20190329091		2019-10-31	ICON Health & Fitness, Inc.	

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Examiner Initials*	Cite No.	Document Number	Kind Code ¹	Filing Date	Name of Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1	29568648		2016-06-20	ICON Health & Fitness, Inc.	
	2	29702127		2019-09-16	ICON Health & Fitness, Inc.	
	3	13088007		2011-04-15	Scott R. Watterson	
	4	15821386		2017-11-22	ICON Health & Fitness, Inc.	
	5	15973176		2018-05-07	Melanie Douglass	
	6	16378022		2019-04-08	William T. Dalebout	
	7	16435104		2019-06-07	Dale Alan Buchanan	
	8	16506085		2019-07-09	ICON Health & Fitness, Inc.	
	9	62697833		2018-07-13	ICON Health & Fitness, Inc.	
	10	62796952		2019-01-25	ICON Health & Fitness, Inc.	
	11	62804146		2019-02-11	ICON Health & Fitness, Inc.	
	12	62804685		2019-02-12	ICON Health & Fitness, Inc.	
	13	62852118		2019-05-22	David Hays	
	14	62866576		2019-06-25	ICON Health & Fitness, Inc.	
	15	62887391		2019-08-15	ICON Health & Fitness, Inc.	
	16	62887398		2019-08-15	ICON Health & Fitness, Inc.	
	17	62897113		2019-09-09	ICON Health & Fitness, Inc.	
	18	62842118		2019-05-23	ICON Health & Fitness, Inc.	

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear	T ⁵
	1	203989681	CN		2014-12-10	ZHONGGUAN ZESHENG BEIJING TECHNOLOGY CO LTD		X
	2	100829774	KR		2008-05-16	KIM JAE CHUL		X
	3	I339127	TW		2008-08-21	CHANG CHUN-YI		X
	4	M422981	TW		2012-02-21	Lifegear Taiwan Ltd		X
	5	M504568	TW		2015-03-01	Shen et al.		X
	6	2000030717	WO		2000-06-02	ICON Health & Fitness, Inc.		
	7	2009014330	WO		2009-01-29	Jae-Chul Kim		

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NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ⁵
	1	English Translation of Search Report for Taiwan Patent Application No. 104131458 issued 2016-06-03	
	2	English Translation of Search Report for Taiwan Patent Application No. 105126694 issued 2017-10-03	
	3	International Search Report and Written Opinion issued in PCT/US2016/048692 dated 2016-12-01	
	4	International Search Report and Written Opinion issued in PCT/US2017/023002 dated 2017-06-28.	
	5	International Search Report and Written Opinion issued in PCT/US2017/022989 dated 2017-05-23.	

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p> <p>¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if the reference is accompanied by a translation into English or if a concise explanation of the relevance, as presently understood by the undersigned attorney of record, of each listed reference that is not in the English language and is unaccompanied by a translation into English is provided with the reference.</p>			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	17/115,699
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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John T. Gadd/	Date (YYYY-MM-DD)	2021-01-11
Name/Print	John T. Gadd	Registration Number	52928

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

EXHIBIT 14



UNITED STATES PATENT AND TRADEMARK OFFICE

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 United States Patent and Trademark Office
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 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

98114 7590 01/29/2021
 ICON Health & Fitness, Inc.
 1500 South 1000 West
 Logan, UT 84321

EXAMINER

L.O. ANDREW S

ART UNIT

PAPER NUMBER

3784

DATE MAILED: 01/29/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/115,708	12/08/2020	William Dalebout	I1618.10048US07	6219

TITLE OF INVENTION: Strength Training Apparatus

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	04/29/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

98114 7590 01/29/2021
ICON Health & Fitness, Inc.
1500 South 1000 West
Logan, UT 84321

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/115,708	12/08/2020	William Dalebout	I1618.10048US07	6219

TITLE OF INVENTION: Strength Training Apparatus

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nond provisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	04/29/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
LO, ANDREW S	3784	482-006000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/115,708	12/08/2020	William Dalebout	I1618.10048US07	6219
98114	7590	01/29/2021	EXAMINER	
ICON Health & Fitness, Inc. 1500 South 1000 West Logan, UT 84321			L.O. ANDREW S	
			ART UNIT	PAPER NUMBER
			3784	
DATE MAILED: 01/29/2021				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
 (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b) (2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/115,708	Applicant(s) Dalebout et al.	
	Examiner ANDREW S LO	Art Unit 3784	AIA (FITF) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the claims filed on 12/08/2020.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-68. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

<ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____. 3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date. _____. 	<ol style="list-style-type: none"> 5. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 7. <input type="checkbox"/> Other _____.
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/ANDREW S LO/
Primary Examiner, Art Unit 3784

EXAMINER'S COMMENT

Claim Interpretation

1. The following is a quotation of 35 U.S.C. 112(f):

(f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

- (A) the claim limitation uses the term “means” or “step” or a term used as a substitute for “means” that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;
- (B) the term “means” or “step” or the generic placeholder is modified by functional language, typically, but not always linked by the transition word “for” (e.g., “means for”) or another linking word or phrase, such as “configured to” or “so that”; and

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(C) the term “means” or “step” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word “means” (or “step”) in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word “means” (or “step”) in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations in this application that use the word “means” (or “step”) are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this application that do not use the word “means” (or “step”) are not being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

This application includes one or more claim limitations that do not use the word “means,” but are nonetheless being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, because the claim limitation(s) uses a generic placeholder that is coupled with functional language without reciting sufficient structure to perform the recited function and the generic placeholder is not preceded by a structural modifier. Such claim limitation(s) is/are:

1) electronic input device in claims 1, 19, and 20;

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- 2) electronic output device in claims 1, 19, and 20; and
- 3) magnetic mechanism in claims 21, 43, and 60.

Because this/these claim limitation(s) is/are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, it/they is/are being interpreted to cover the corresponding structure described in the specification as performing the claimed function, and equivalents thereof.

If applicant does not intend to have this/these limitation(s) interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, applicant may: (1) amend the claim limitation(s) to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph (e.g., by reciting sufficient structure to perform the claimed function); or (2) present a sufficient showing that the claim limitation(s) recite(s) sufficient structure to perform the claimed function so as to avoid it/them being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph.

REASONS FOR ALLOWANCE

2. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, none of the prior art either alone or in combination teach or suggest all the structural and functional limitations as recited in the claim, and more specifically, a strength training apparatus comprising: a first arm and a second arm each being configured to be selectively pivoted independent of each other at multiple angles relative to each other; a first pulley coupled to an end of the first arm; a first cable extending through the first arm and the first pulley; a second pulley coupled to an end of the second arm; a second cable extending through the second arm and the second pulley; and an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic control panel including: a processor and a memory configured to control a current

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level of resistance, an electronic input device configured to allow the user to set the current level of resistance, and an electronic output device configured to display the current level of resistance.

Claims 2-18, and 21-26 depend either directly or indirectly from claim 1 and are allowable for all the reasons claim 1 is allowable.

Regarding claim 19, none of the prior art either alone or in combination teach or suggest all the structural and functional limitations as recited in the claim, and more specifically, a strength training apparatus comprising: a first arm and a second arm each being configured to be selectively pivoted independent of each other to be selectively positioned at multiple angles relative to each other; a first pulley coupled to an end of the first arm; a first cable extending through the first arm and the first pulley; a second pulley coupled to an end of the second arm; a second cable extending through the second arm and the second pulley; and an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic control panel including: a processor and a memory configured to control a current level of resistance, the processor and the memory further configured to calculate an amount of power expended within a period of time by the user pulling on the first cable and/or the second cable, an electronic input device configured to allow the user to set the current level of resistance, and an electronic output device configured to display the current level of resistance, the electronic output device further configured to display the calculated amount of power.

Claims 27-48 depend either directly or indirectly from claim 19 and are allowable for all the reasons claim 19 is allowable.

Regarding claim 20, none of the prior art either alone or in combination teach or suggest all the structural and functional limitations as recited in the claim, and more specifically, a

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strength training apparatus comprising: a first arm and a second arm each being configured to be selectively pivoted independent of each other to be selectively positioned at multiple angles relative to each other; a first pulley coupled to an end of the first arm; a first cable extending through the first arm and the first pulley; a second pulley coupled to an end of the second arm; a second cable extending through the second arm and the second pulley; and an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic control panel including: a processor and a memory configured to control a current level of resistance, the processor and the memory further configured to receive and store a physical fitness goal that is inputted by the user, the processor and the memory further configured to provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal, an electronic input device configured to allow the user to set the current level of resistance, and an electronic output device configured to display the current level of resistance.

Claims 49-68 depend either directly or indirectly from claim 20 and are allowable for all the reasons claim 20 is allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW S LO whose telephone number is (571)270-1702. The examiner can normally be reached on Mon. - Fri. (9:30 am - 5:30 pm EST).

Application/Control Number: 17/115,708
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Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LoAn Jimenez can be reached on (571) 272-4966. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ANDREW S LO/
Primary Examiner, Art Unit 3784

EXHIBIT 15



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

98114 7590 02/09/2021
 ICON Health & Fitness, Inc.
 1500 South 1000 West
 Logan, UT 84321

EXAMINER

L.O, ANDREW S

ART UNIT

PAPER NUMBER

3784

DATE MAILED: 02/09/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/115,699	12/08/2020	Michael L. Olson	11618.10052US08	9895

TITLE OF INVENTION: Cable Exercise Machine

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	05/10/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEES/TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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98114 7590 02/09/2021
ICON Health & Fitness, Inc.
1500 South 1000 West
Logan, UT 84321

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/115,699	12/08/2020	Michael L. Olson	I1618.10052US08	9895

TITLE OF INVENTION: Cable Exercise Machine

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	05/10/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
LO, ANDREW S	3784	482-005000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,

1 _____

(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. Change in Entity Status (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

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Date _____

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/115,699	12/08/2020	Michael L. Olson	I1618.10052US08	9895
98114	7590	02/09/2021	EXAMINER	
ICON Health & Fitness, Inc. 1500 South 1000 West Logan, UT 84321			L.O. ANDREW S	
			ART UNIT	PAPER NUMBER
			3784	
DATE MAILED: 02/09/2021				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
 (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b) (2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 17/115,699	Applicant(s) Olson et al.	
	Examiner ANDREW S LO	Art Unit 3784	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the claims filed on 12/08/2020.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-75. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. <input type="checkbox"/> Notice of References Cited (PTO-892)	5. <input type="checkbox"/> Examiner's Amendment/Comment
2. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance
3. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. <input type="checkbox"/> Other _____.
4. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date. _____.	

/ANDREW S LO/
Primary Examiner, Art Unit 3784

Application/Control Number: 17/115,699
Art Unit: 3784

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REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:

Regarding claim 1, none of the prior art either alone or in combination teach or suggest all the structural and functional limitations as recited in the claim, and more specifically in combination, a cable exercise machine comprising: a first vertical guide; a first pull cable routed through a first pulley, the first pulley movable along a length of the first vertical guide; a second vertical guide; a second pull cable routed through a second pulley, the second pulley movable along a length of the second vertical guide; and an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable, electronically allow for adjustment of the level of resistance to the user pulling on the first pull cable and/or the second pull cable, and electronically present the adjusted level of resistance to the user.

Claims 2-10, and 21-35 depend either directly or indirectly from claim 1 and are allowable for all the reasons claim 1 is allowable.

Regarding claim 11, none of the prior art either alone or in combination teach or suggest all the structural and functional limitations as recited in the claim, and more specifically in combination, a cable exercise machine comprising: a first pull cable routed through a first pulley; a second pull cable routed through a second pulley; and an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable, electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable, electronically present the adjusted level of resistance to the user, and electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of a workout.

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Claims 12-14 and 36-56 depend either directly or indirectly from claim 11 and are allowable for all the reasons claim 11 is allowable.

Regarding claim 15, none of the prior art either alone or in combination teach or suggest all the structural and functional limitations as recited in the claim, and more specifically in combination, a cable exercise machine comprising: a first pull cable routed through a first pulley; a second pull cable routed through a second pulley; and an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable, electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable, electronically present the adjusted level of resistance to the user, and electronically receive input from the user to play an audiovisual program, and play the audiovisual program for the user.

Claims 16-20, and 57-75 depend either directly or indirectly from claim 15 and are allowable for all the reasons claim 15 is allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW S LO whose telephone number is (571)270-1702. The examiner can normally be reached on Mon. - Fri. (9:30 am - 5:30 pm EST).

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is

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encouraged to use the USPTO Automated Interview Request (AIR) at
<http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, LoAn Jimenez can be reached on (571) 272-4966. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

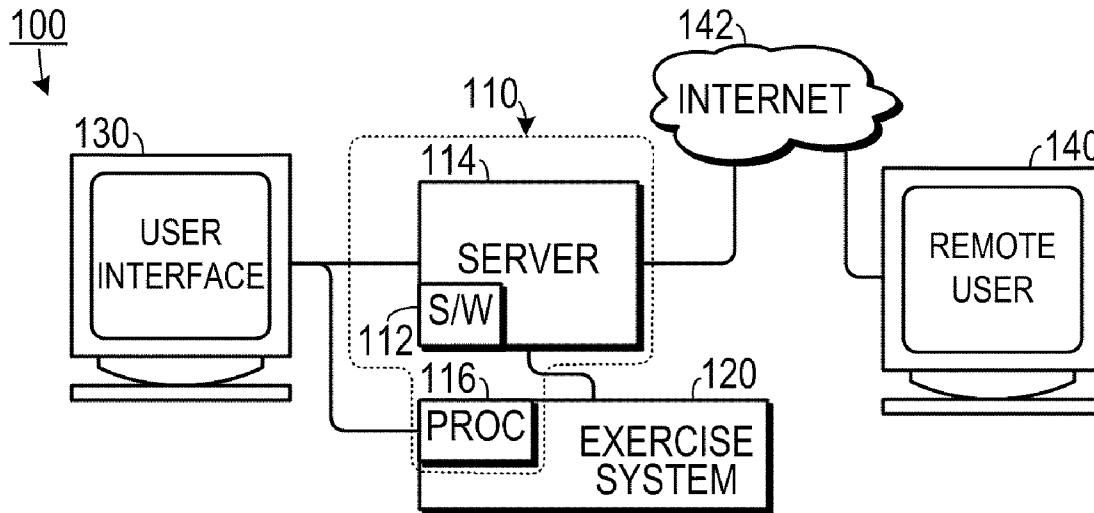
/ANDREW S LO/
Primary Examiner, Art Unit 3784

EXHIBIT 16

US 20090269728A1

(19) **United States**(12) **Patent Application Publication**
Verstegen et al.(10) **Pub. No.: US 2009/0269728 A1**(43) **Pub. Date: Oct. 29, 2009**(54) **ATHLETE TRAINING SYSTEM****Publication Classification**(75) Inventors: **Mark A. Verstegen**, Scottsdale, AZ (US); **D. Craig Friedman**, Tempe, AZ (US); **Michael D. Verstegen**, Bellevue, WA (US)(51) **Int. Cl.**
A63B 69/00 (2006.01)(52) **U.S. Cl.** **434/247**(57) **ABSTRACT**Correspondence Address:
BRYAN W. BOCKHOP, ESQ.
BOCKHOP & ASSOCIATES, LLC
2375 MOSSY BRANCH DR.
SNELLVILLE, GA 30078 (US)

A system for training an athlete during a training period includes a digital system that is programmed to: receive a plurality of inputs regarding a current state of the athlete and a training goal for the athlete; employ an expert system to generate a training prescription for the athlete; and generate a plurality of control outputs that correspond to the listing of training activities. An exercise apparatus includes at least one activity device that is configured to: facilitate the athlete performing a predetermined exercise; receive the control output from the digital system and to adjust an exercise parameter so as to correspond to the training parameter indicated by the control output; and generate an electronic result output indicative of use by the athlete of the activity device wherein the result output is transmitted to the digital system.

(73) Assignee: **ATHLETES' PERFORMANCE**, Tempe, AZ (US)(21) Appl. No.: **12/111,295**(22) Filed: **Apr. 29, 2008**

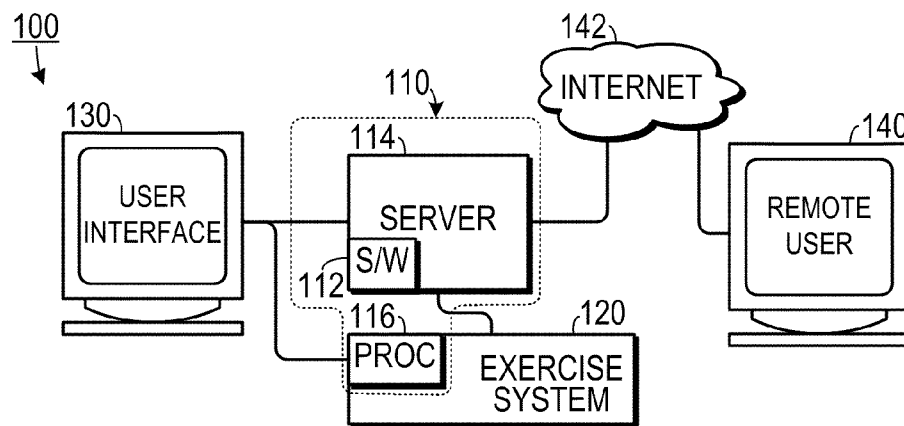


FIG. 1

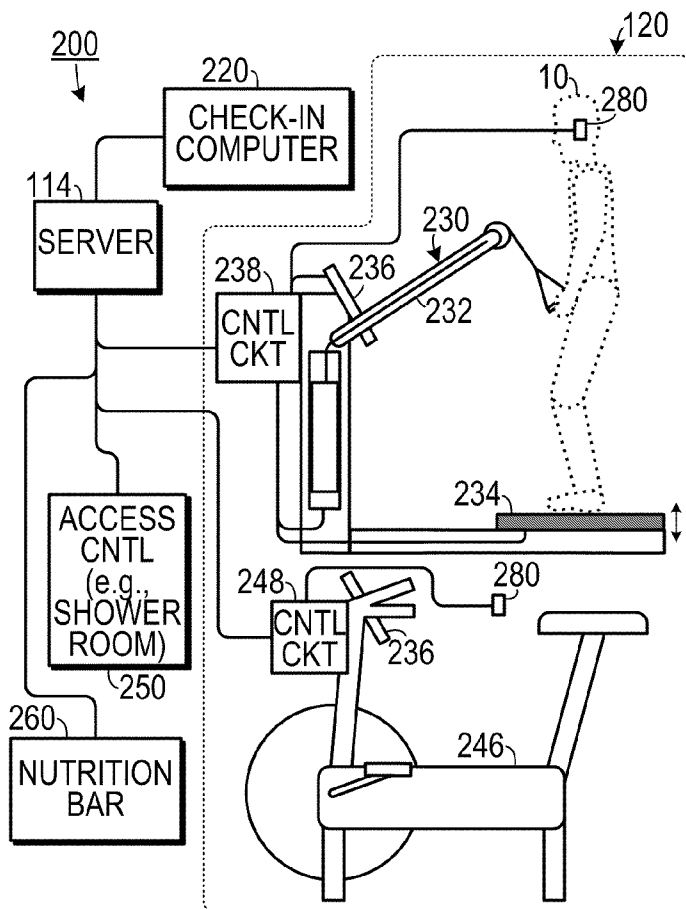


FIG. 2

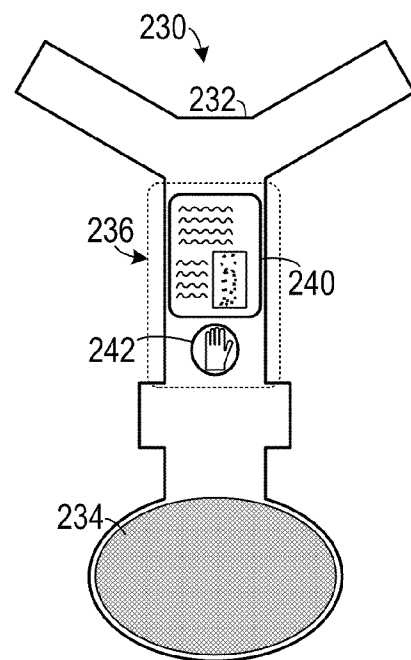


FIG. 3

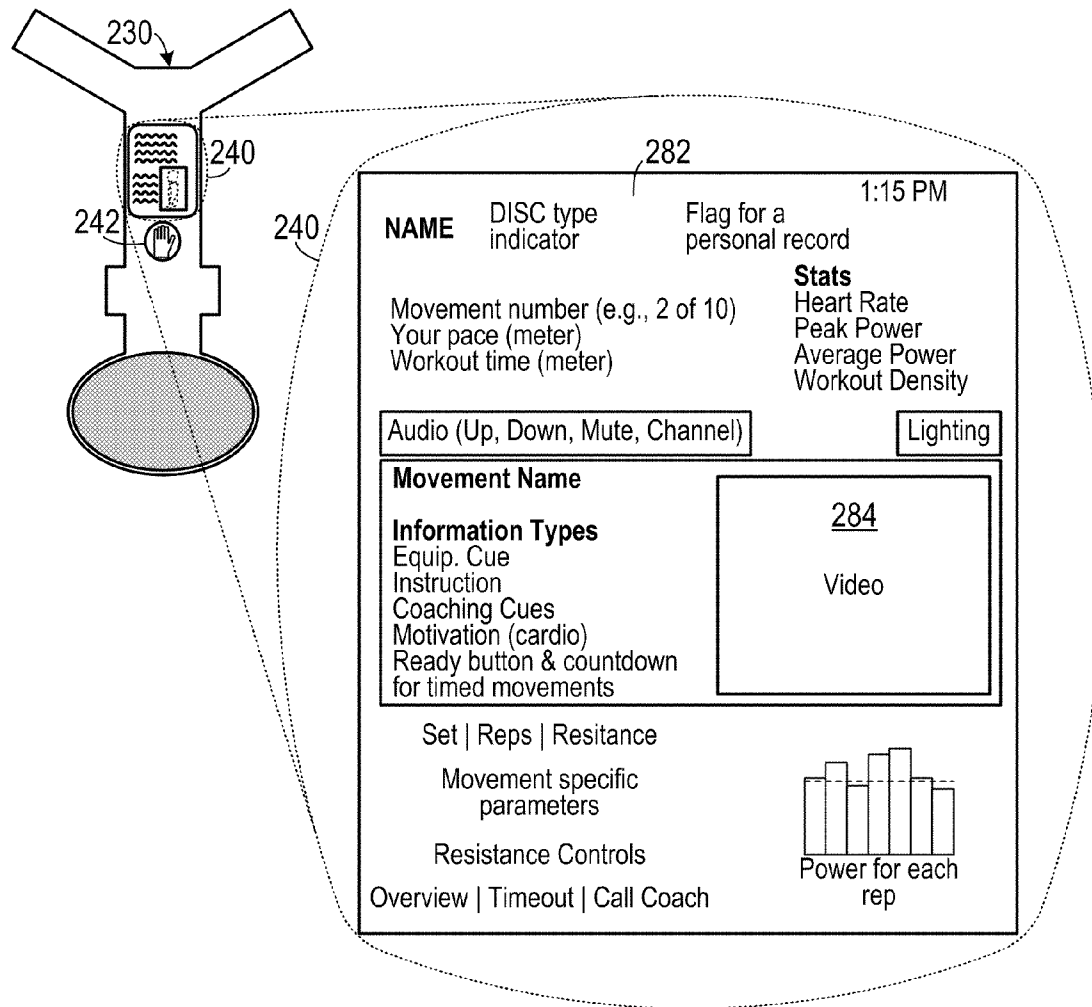


FIG. 4

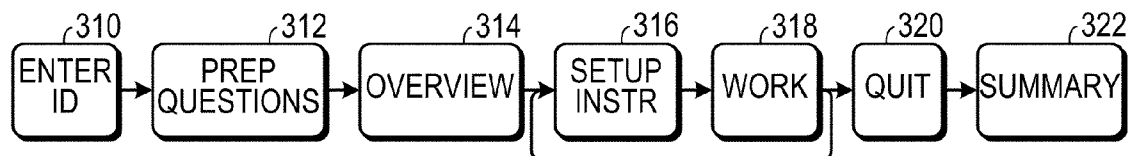


FIG. 5

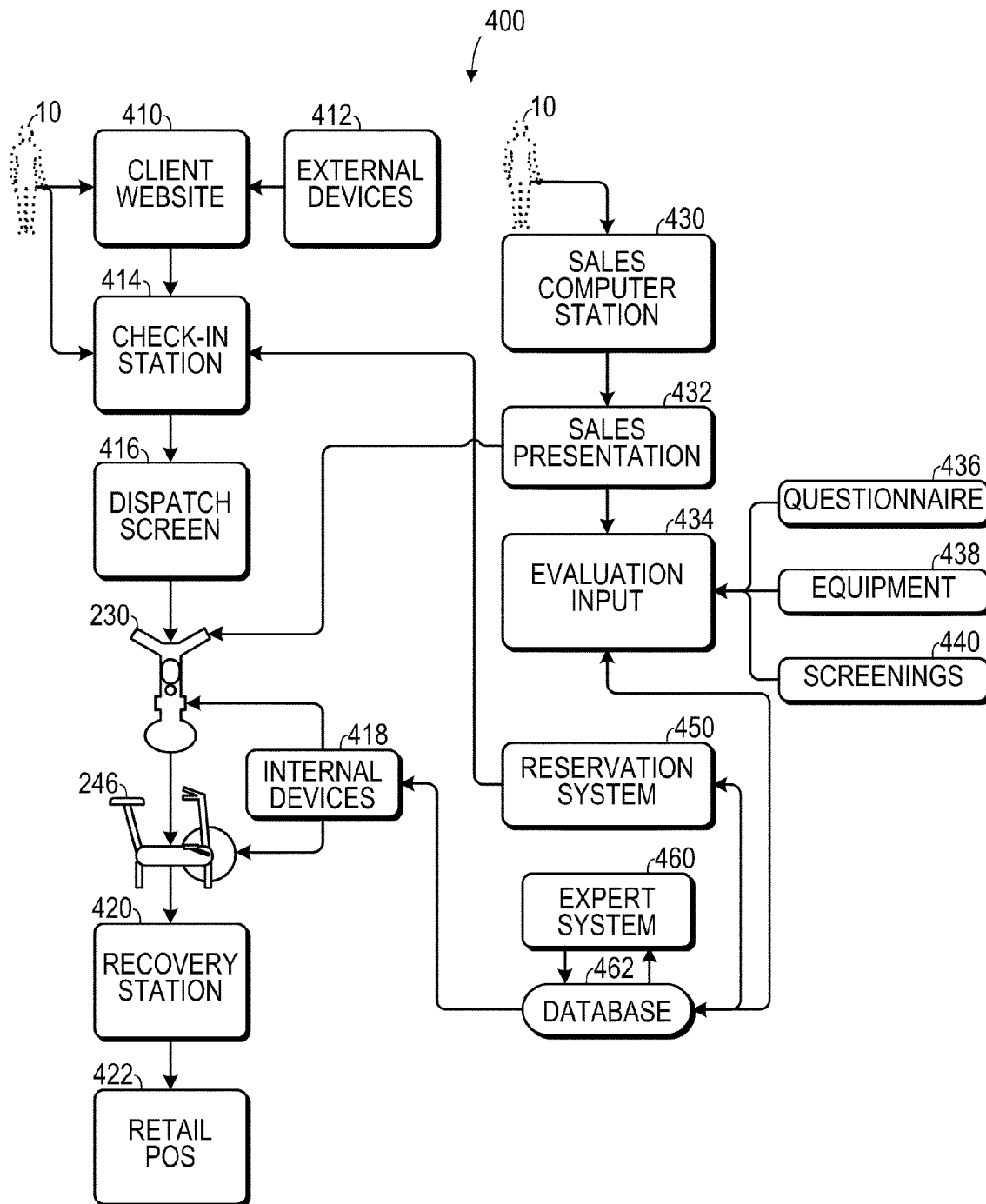


FIG. 6

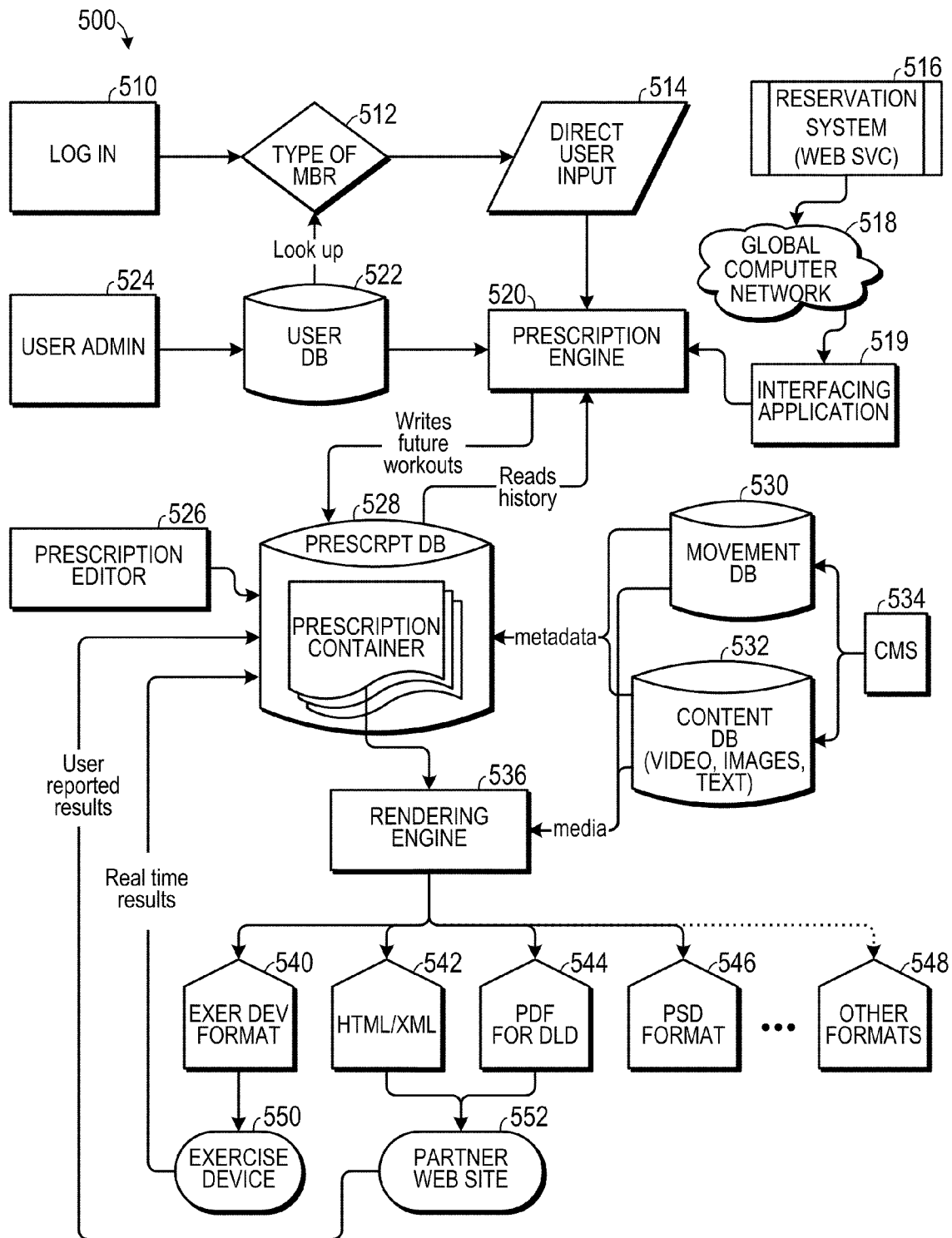


FIG. 7

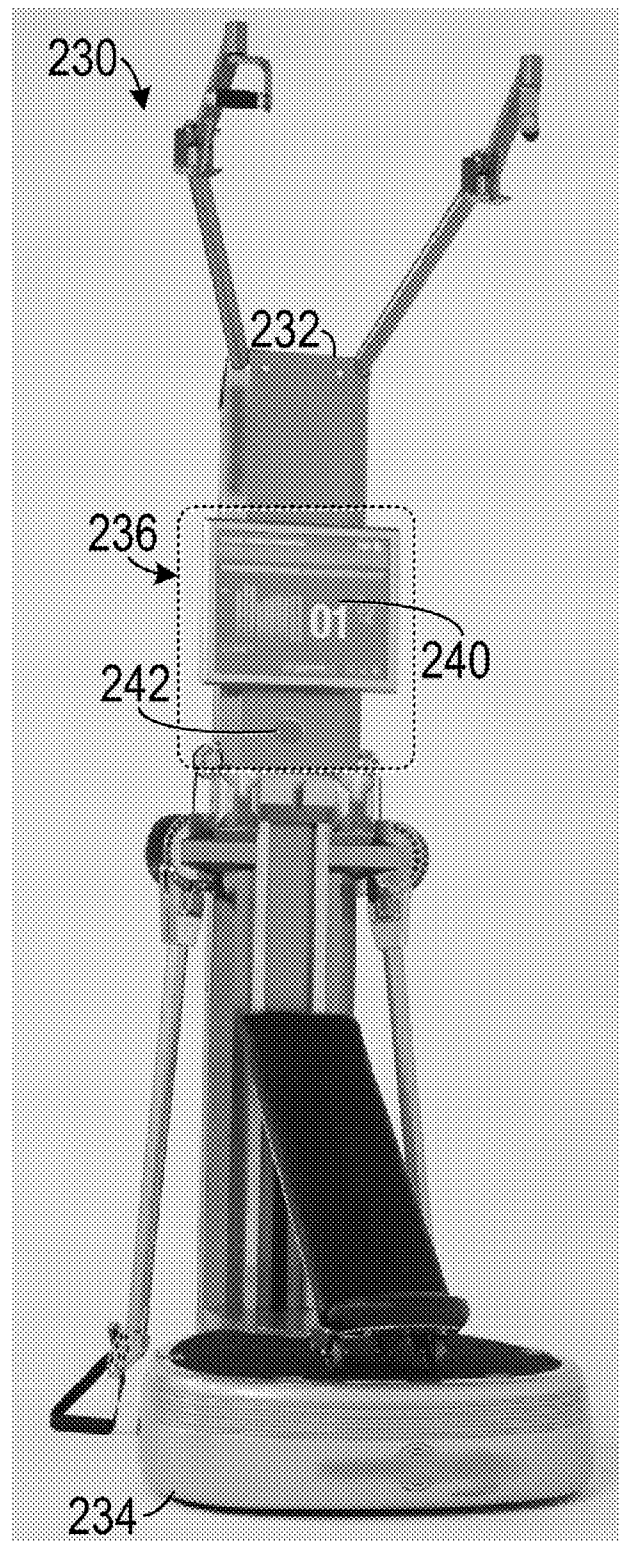


FIG. 8

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Oct. 29, 2009

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ATHLETE TRAINING SYSTEM

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to systems for training athletes and, more specifically, to a system that automates the functions of an athlete training professional.

[0003] 2. Description of the Prior Art

[0004] The growth in popularity of professional and amateur sports has resulted in a substantial growth in the athletic training business. Professional athletes and premium amateur athletes (such as Olympic athletes) often hire athletic training professionals (such as strength coaches, exercise physiologists, physical therapists and the like) to prepare them for the sports in which they participate. The purpose of such preparation might be general (such as maximizing an athlete's physical condition) or it might be quite specific, for example a football receiver might come to a trainer to optimize his ability to receive a specific style of pass. It may also be directed to overcoming a specific injury or deficiency on the part of the athlete. Such training typically involves a highly specialized training and nutritional regimen based on data collected about the athlete and the considerable body of knowledge that has been accumulated in the field of sports physiology.

[0005] A typical trainer, in preparing a training regimen for an athlete, typically evaluates the current physical state of the athlete and the athlete's training goals. He then develops a training prescription for the athlete. The training prescription, which sets forth a schedule of training activities, is based on the athletes physical state and training goals in view of the trainer's knowledge of sports physiology and his experience with similar athletes. Typically, the trainer goes through an extensive thought process in developing the prescription and repeats the process before each training session with the athlete. In fact, a trainer will often spend as much as one hour preparing for a one hour training session for a professional athlete.

[0006] Such preparation and training can be quite expensive. Professional athlete-caliber trainers have a highly-specialized education and experienced trainers are in high demand. As a result, only higher tiers of athletes can afford such training. There is a desire on the part of lower tier athletes for similar training, yet many such lower tier athletes simply cannot afford such training. There is also a desire among professional sports teams and the like for more cost effective training of their athletes.

[0007] Therefore, there is a need for a system that automates a substantial portion of the athletic training process.

SUMMARY OF THE INVENTION

[0008] The disadvantages of the prior art are overcome by the present invention which, in one aspect, is a system for training an athlete during a training period. The system includes a digital system that is programmed to receive a plurality of inputs regarding a current state of the athlete and a training goal for the athlete. The digital system is also programmed to employ an expert system to generate a training prescription for the athlete, wherein the expert system mimics a thought process of an athlete training professional and wherein the prescription includes a listing of training activities to be completed during each of a plurality of training sessions during the training period. The digital system is

also programmed to generate a plurality of control outputs that correspond to the listing of training activities, each control output corresponding to a training activity listed in the prescription and providing an indicating of a training parameter relating to the training activity. An exercise apparatus includes at least one activity device. The activity device is configured to facilitate the athlete performing a predetermined exercise. The activity device is also configured to receive the control output from the digital system and to adjust an exercise parameter so as to correspond to the training parameter indicated by the control output. The activity device is further configured to generate an electronic result output indicative of use by the athlete of the activity device wherein the result output is transmitted to the digital system.

[0009] In another aspect, the invention is an athletic training station for training an athlete, in which an exercise apparatus is configured to facilitate performance of a plurality of exercises by the athlete. A vibration platform (such as a whole body vibration platform) is configured to generate vibrations of a preselected amplitude and a preselected frequency and is disposed in a position relative to the strength training apparatus so that the athlete is subjected to the vibrations when performing the plurality of exercises. A control circuit is coupled to the strength training apparatus and for the vibration platform and is configured to set operational parameters for the strength training apparatus and for the vibration platform in response to a predefined stimulus.

[0010] In another aspect, the invention is an exercise system for training an athlete that includes a controllable exercise apparatus that includes at least one exercise function and that is configured to set the exercise function to a selected value within a range of values in response to a control signal. A metabolic sensor is configured to sense a metabolic parameter of the athlete and to generate a metabolic signal representative thereof. A processor that is responsive to the metabolic signal is configured to compare the metabolic parameter to a preselected value. The processor is also configured to modify the control signal so that the selected value of the exercise function will cause the metabolic parameter of the athlete to tend to the preselected value. The preselected value may change during an exercise session based on input from the athlete or a coach.

[0011] In yet another aspect, the invention is a method for training an athlete, operable on a digital system that includes a memory upon which is stored a program. The athlete is queried regarding at least one goal that the athlete seeks to achieve. Data indicative of a physical state of the athlete is received. An expert system is executed on the digital system that mimics a thought process employed by a professional trainer to generate a training prescription, based on the goal and the physical state of the athlete. The prescription sets forth a schedule of when each of a plurality of exercise sessions is to occur and which exercise activities are to occur during each session. The prescription also sets forth a description of a recovery activity that is to occur as a part of each session and a nutritional activity that is to occur after each session. Data are transmitted from the digital system to an exercise apparatus so as to configure the exercise apparatus according to the prescription.

[0012] These and other aspects of the invention will become apparent from the following description of the preferred embodiments taken in conjunction with the following drawings. As would be obvious to one skilled in the art, many

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variations and modifications of the invention may be effected without departing from the spirit and scope of the novel concepts of the disclosure.

BRIEF DESCRIPTION OF THE FIGURES OF THE DRAWINGS

[0013] FIG. 1 is a schematic diagram showing various components of a training system according to one representative embodiment of the invention.

[0014] FIG. 2 is a schematic diagram showing interaction between a digital system, an exercise apparatus and components of a training facility.

[0015] FIG. 3 is a schematic diagram showing a representative strength training apparatus.

[0016] FIG. 4 is a flow diagram showing a process executed by an athlete and a training system.

[0017] FIG. 5 is a schematic diagram showing a detail of a user interface screen on one embodiment of an exercise device.

[0018] FIG. 6 is a flow diagram showing a typical training system.

[0019] FIG. 7 is a flow chart showing an athletic training system architecture.

[0020] FIG. 8 is a photograph showing a commercial embodiment of a strength training apparatus.

DETAILED DESCRIPTION OF THE INVENTION

[0021] A preferred embodiment of the invention is now described in detail. Referring to the drawings, like numbers indicate like parts throughout the views. As used in the description herein and throughout the claims, the following terms take the meanings explicitly associated herein, unless the context clearly dictates otherwise: the meaning of “a,” “an,” and “the” includes plural reference, the meaning of “in” includes “in” and “on.” Also, as used herein, “global computer network” includes the Internet.

[0022] The invention is a system that automates the process used to train highly accomplished athletes. It receives data regarding the athlete's conditions and goals, employs an expert system that mimics the thought process of an athlete training professional (e.g., a strength coach, an exercise physiologist, a personal coach, a physical therapist, etc.) to generate a training prescription for the athlete, and guides the athlete through a plurality of training sessions according to the prescription. The system also sets operating parameters on exercise equipment and receives data regarding the training sessions to monitor compliance with the prescription and to modify it in view of changing circumstances. Such data can relate to such parameters as: number of repetitions performed, power, speed, rate at which an action occurs, heart rate, user input and the like. The system also provides nutritional monitoring to ensure optimal results.

[0023] In one embodiment, the athlete is initially queried regarding his or her desired goals. For the example, the athlete might be training for a professional athletic league scouting combine, or he might be a professional athlete who is training to overcome a specific injury, or is just trying to stay in shape during an off-season period. The athlete might also be an amateur who is training for a specific event, such as a marathon, or the athlete might be seeking to improve general fitness.

[0024] Various biometric measurements are measured from the athlete, including such things as: height, weight,

body composition (i.e., body fat, lean body mass, etc.), etc. A baseline metabolic measurement indicative of the athlete's current physical state is also taken. This might include information such as how long it takes the athlete's heart rate to recover to a first predetermined heart rate from a second predetermined heart rate and how the athlete's heart rate and respiration in respond to a variety of work loads (e.g., incline and speed on a treadmill). Based on this information and other information regarding the physical state of the athlete (including: injury history, training history, how the athlete currently feels, current state of an injury and future physical goals), the system executes a computer-based expert system that mimics the thought processes employed by a professional trainer to generate a training prescription. The expert system could be something as simple as a decision tree that is based on an expert trainer's responses to a series of questions involving the different possible goals and condition parameters of the athlete. The expert system could also be a more complicated system in which numerous case studies are put into a neural system and the neural system is programmed to converge on an optimal prescription for each set of input data regarding the current state of the athlete. As will be clearly appreciated by those of skill in the art, many other types of expert system could be employed without departing from the scope of the invention.

[0025] Based on the goal and the physical state of the athlete the expert system will generate the prescription, which sets forth a schedule of when each of a plurality of exercise sessions is to occur and which training activities are to occur during each session. The prescription will also set forth a description of the recovery activities that are to occur after each exercise or combination of exercises. The prescription will also set forth a description of the nutritional requirements of the athlete to maintain optimal results. Specifically, the system will indicate specific nutritional activities that are to occur after each session.

[0026] Periodically, either before or after each training session (or both), the system can query the athlete regarding his current physical state and current goals. This process might be something as simple as querying whether the athlete feels good or bad. The system might also ask about the degree to which an injury has healed, or whether the athlete is tired from external influences. The system might inquire about the athlete's compliance with the nutritional aspect of the training prescription while at home. Many other pieces of information about the athlete may be requested from the athlete. The system can also inquire about training activities that have been executed by the athlete away from the training facility. The system can use this information, along with performance data and metabolic data received from the exercise devices used in the training sessions to reevaluate the prescription and revise it to reflect the new information.

[0027] Once the prescription has been generated, the training period, which includes a plurality of training sessions, will commence. At each training session, the system will transmit data to the exercise apparatus that the athlete is to use to configure the exercise apparatus according to the prescription. The system may also measure performance or results of the training session.

[0028] Generally, the invention includes a system for training athletes that includes a user interface, a server that receives input from the user interface, a computer-controllable exercise machine that is coupled to the server and a software program that runs on the server. The software pro-

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gram receives user input and provides information regarding a training regimen to both the user and control inputs the exercise machine. The program also receives feedback from both the user and the exercise machine and makes adjustments to the training regimen based thereon.

[0029] When the athlete reports for a training session, he checks in at a check-in computer that includes a user interface, where he is asked about his current physical state. The check in can include an initial identification through, for example: the swiping of a magnetic card, the reading of a bar code card, RFID or the sensing of a near field communication chip in a cell phone, etc. The server sets several parameters of the exercise machine to levels set forth in the prescription. For example, the exercise machine may employ pneumatic dampers to provide resistance in a given exercise. The server can set the exercise machine to have a desired resistance level for the exercise by controlling the pressure in the pneumatic damper.

[0030] Once the athlete begins a training session, information about the exercises being performed may be displayed on a screen on the exercise machine. Such information can include requirements and videos showing proper performance on an exercise. The system can also provide the athlete with prompts (e.g., verbal or visual prompts) relating to the exercise.

[0031] As an exercise progresses, the exercise machine measures and records information about the athlete's progress and provides feedback to the server. The program can then adjust the prescription based on the feedback received according to the expert system being employed. The athlete indicates completion of an exercise by activating an input. Once an exercise is completed, the system starts the athlete on a next exercise. This continues until all of the scheduled exercises have been completed. Once a training session has finished, the system instructs the athlete regarding cleanup, etc. and the athlete is allowed to make a reservation for a subsequent training session. Once the athlete indicates completion of the training session, the system releases the exercise machine.

[0032] The server is in communication with the Internet so that the athlete can log on to his account remotely. For example, when the user is traveling, he may have to conduct training sessions at a hotel fitness center. In this case, the athlete can log on to the system, receive training instructions and provide information about the progress of a training session to the system. The system maintains this information in a database.

[0033] As shown in FIG. 1, in one representative embodiment, an athlete training system 100 includes a digital system 110 that runs software 112. The digital system 110 could include a central server 114, data storage and a plurality of distributed processors 116 (including, e.g., processors embedded in exercise devices) in communication with the central server 114. A user interface 130 is in data communication with the digital system 110. A remote user may communicate with the digital system 110 via a global computer network 142. An exercise system 120 communicates with the digital system.

[0034] A typical performance center 200, that would part of the athlete training system 100, is shown in FIG. 2. The server 114 is in communication with a plurality of devices, such as a touch screen and a computer 220, a plurality of exercise systems 120, an access to training-related services (such as a shower room) 250, and a nutrition bar 260. A typical exercise system 120 includes a strength training apparatus 230 (such

as a resistance training apparatus well known to the art of athletic training) and an energy system development apparatus 246, such as a cardiovascular training apparatus.

[0035] In one embodiment, as shown in FIGS. 2, 3 and 8, the strength training apparatus 230 includes an exercise machine 232 and a vibration platform 234, both of which are coupled by a control circuit 238 (which might include a local processor and associated circuitry) that is in communication with the server 114. The exercise machine 232 could be an air resistance training machine of the type known to the art of fitness training or one of many other types of strength training devices (e.g., a weight set, an elastic resistance training set, a flexible bow training set, etc.). The control circuit 238 is configured to apply resistance settings to the exercise machine 232 and to receive performance data therefrom. One type of suitable exercise machine 232 is the Infinity Functional Trainer, available from Keiser Corp., 2470 S Cherry Ave., Fresno, Calif. 93706.

[0036] The vibration platform 234 is controlled by the control circuit 238 and applies vibrations to the athlete 10 during an exercise session with the exercise machine 232. The vibrations cause increased muscle activity during the training session, added skeletal development and improved neuromuscular coordination. One type of suitable vibration platform 234 is the Power Plate, available from Power Plate North America, Inc., 400 Skokie Blvd, Suite #105, Northbrook, Ill. 60062.

[0037] The energy system development apparatus 246 could be a cardio trainer, such as an exercise bicycle, a vertical climber, an elliptical trainer or a treadmill. A control circuit 248 coupled to the energy system development apparatus 246 controls operating parameters of the apparatus 246 (such as pedal resistance in the case of an exercise bicycle, or incline and speed in the case of a treadmill, etc.). A biometric sensor 280 (such as a heart rate sensor, a respiration sensor, a galvanic skin resistance sensor, a blood pressure sensor, one of the many other types of biometric sensors known to the art, or combinations thereof) could be in communication with the control circuit 248 and provide information to the server 114 regarding the athlete's 10 current metabolic state.

[0038] The system can work as a closed loop control system (which can be designed employing well know control system design theory) by: receiving metabolic input from the biometric sensor 280, adjusting a parameter (e.g., the incline of a treadmill) of the energy system development apparatus 246 to cause the athlete's metabolic rate tend toward a preselected metabolic rate, and repeat these actions until the athlete's metabolic rate is stable within a target range of metabolic rates.

[0039] As an illustrative example, if the athlete is on a treadmill and the prescription calls for a sustained heart rate in the range of 162 to 168 beats per minute for a given period of time and if the athlete's heart rate is 135 beats per minute, then the system can increase the incline of the treadmill by five degrees and increase the speed. If, in response, the heart rate levels off at 170 beats per minute, the system can reduce the incline by three degrees and decrease the speed. If the resultant heart rate then levels off at 160 beats per minute, the system could increase the incline by one degree. If the heart rate levels off at 165 beats per minute, then the system would maintain the incline for the remainder of this portion of the training session in which the heart rate stays within the desired range.

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[0040] The system could also employ several different ranges for different periods. For example, the system could warm up the athlete using a target heart rate range of 110-120 beats per minute for four minutes, then increase the range to 160-170 beats per minute for four minutes, then have a wind down period where the target range is 90-100 beats per minute for another four minutes. The system could then assign a five minute rest/recovery period to the athlete, at the end of which time another exercise activity is assigned.

[0041] It is also possible to execute a closed loop system without necessarily adjusting the functionality of a device. For example, a video monitor could instruct the athlete to pedal faster (or slower) in response to his heart rate not being within the desired range. Similarly, a pace ticker (similar to a metronome) could speed up or slow down in response to a heart rate outside the desired range.

[0042] As shown in FIGS. 2 and 3, the strength training apparatus 230 has an audiovisual user interface 236 that is used to provide information to, and receive information from, the athlete 10. It is in data communication with the control circuit 238. The user interface 236 can include a video display 240 (which could include a touch screen display capable of receiving input from the athlete 10 and transmitting it to the server 114), a user input button 242 and audio speakers (not shown). The user input button 242, which in one embodiment includes an image of a palm and is called a "high five button," is used to signal datum inputs from the athlete 10, such as an indication that the athlete 10 has completed an exercise, thereby causing the system to begin the next exercise in the prescription.

[0043] A detail of a typical screen 282 that could be shown on the video display 248 is shown in FIG. 4. This screen 282 displays information to the athlete regarding the current training activity. For example, the screen 282 could include such information as: which movement out of the total movements assigned that the athlete is currently working on, the athlete's current metabolic state, movement specific parameters and average power exerted by the athlete (including a histogram showing the power exerted in each repetition). The screen 282 can also include control inputs, such as: audio controls, lighting controls, manual resistance settings, timeout controls, a control that pages a coach, etc. The screen 282 can also include video content 284 such as a video representation or an animation of someone demonstrating the current exercise assigned to the athlete. In addition, the screen 282 can include timers, counters and other cues to help the athlete maintain cadence and correct timing for repetitive movements or timed movements. The screen 282 can also include information to assist the coach in interacting with or assisting the athlete.

[0044] The screen 282 could also be tailored to maximize communication with a specific user. For example, the screen 282 could display the athlete's name, or it could display a preferred nickname of the athlete. The system can make a personality test (such as a DISC-type test) part of the initial testing of the athlete. The resulting profile can be used to determine the optimal manner in which the screen 282 communicates with the athlete. For example, if the athlete is systems oriented, the screen 282 might display a message such as "heart rate below target: increasing incline," whereas if the athlete is more socially oriented the screen 282 might display a message such as "John, your heart is below the target so we are going to raise the incline of your treadmill." A coach may also adjust the communication style to reflect the needs or the preferences of the athlete.

[0045] As shown in FIG. 5, a typical athletic training session would start with the athlete entering a user identification 310 into the system. This could be done, e.g., at the check-in computer or at a remote computer by entering a personal identification number or swiping a machine-readable card. The athlete would answer several preparatory questions 312 regarding, e.g., the athlete's current state, recent activities by the athlete, the athlete's current training goals and the athlete's preferences for an after-workout nutritional supplement (e.g., the athlete's preference for flavor of a protein shake). Based on this information, the system updates the athlete's prescription, generates a revised training program for the current session and presents an overview 314 of the current session to the athlete. The system then instructs 316 the athlete on commencing the session (e.g., assigning a training apparatus to the athlete and providing the athlete with instructions on how to commence training) and the athlete commences the training session 318. The training session 318 could include several different exercises (using different exercise devices) interleaved with predetermined recovery activities. Once the training session 318 is completed, the athlete is instructed to execute a quitting protocol 320, which could include such activities as wiping down the exercise apparatus and proceeding to a nutrition bar to receive an after-workout nutritional supplement. At this stage, the system can update the athletes prescription based on data regarding the athlete's performance (including data received during the training session). The athlete is then given a summary of the training session 322 and is given access to a shower room.

[0046] The training prescription includes a nutritional component. Because of the demands of each training session on the athlete's body, the athlete will require a specific nutritional regimen to ensure that the athlete achieves optimal results. Therefore, after each training session, the athlete is given a nutritional supplement, such as a protein shake. The system inquires from the athlete about his preferred flavor at the beginning of each session and transmits this information to the nutrition bar. When the system senses the end of a training session, the system instructs the nutrition bar to prepare the nutritional supplement according to the athlete's preferences and instructs the athlete to go to the nutrition bar. Other nutritional information may be given to the athlete regarding meals taken away from the training facility. This information can include a listing of specific nutritional requirements that need to be met by the athlete at specific times during the training period to achieve optimal results. The nutritional information can provide a complete nutritional plan, including meal plans, supplementation (vitamins, minerals, etc.) and individual nutritional supplements (such as protein shakes, etc.).

[0047] One embodiment of a training system 400 is shown in FIG. 6, in which the athlete 10 can interact with the system 400 through a remote Web site 410, a check-in computer 414 or a sales computer station 430. When an athlete 10 is using the system for the first time, he would access the sales computer station 430 and then would be given a sales presentation 432, which could be viewed on one of the exercise devices 230. The athlete 10 would then undergo an evaluation input session 434 in which he answered a baseline questionnaire 436, demonstrated his current physical state using exercise equipment 438 and was screened 440 for such things as height, weight, body composition, etc. The information acquired through the evaluation input session 434 is saved in a database 462 and used as input for the expert system engine

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460. The expert system **460** then generates the prescription and stores it in the database **462**.

[0048] The athlete may then use a computer-based reservation system **450** to make an appointment for one or more training sessions. This information is then transmitted to the check-in computer **414**.

[0049] When the athlete **10** arrives for a training session, he identifies himself to the check-in computer **414**. The system verifies his reservation and then directs him to the first exercise device **230** (e.g., a strength training device) via a dispatch display screen **416** at the check-in computer **414**. The system then looks up the prescription and sets the internal control device **418** for the first exercise machine to the settings prescribed for the particular training session. The system also transmits audiovisual content to the user interface of the first exercise device **230**. While the athlete **10** is training on the first exercise device **230**, the system acquires data about the athlete's performance and transmits it to the database **462**.

[0050] Once the athlete has completed the first portion of a training session on the first exercise device **230**, the system will instruct him to begin a training portion of the second exercise device **246** (e.g., an energy system training device). Once that portion of the session is complete, the athlete **10** will be directed to a recovery station **420** where he is debriefed about the session and given a nutritional component required by the prescription. He may then be directed to a retail point of sale **422** to pay for the session. The athlete might use another payment method, such as prepayment for a number of sessions and subscription for a given period of time.

[0051] The athlete **10** can access the prescription while away from the training facility **410** using a client Web site **410**. Thus, he can exercise on external devices **412** and report the results via the client Web site **410**.

[0052] In one embodiment, as shown in FIG. 7, the architecture **512** of the digital system includes a log in routine **510**, whose input queries a database **522** of the system's users to indicate the type of member **512** to the system. The athlete can maintain parts of his profile in the user database **522** via a user administration function **524**. The athlete can also provide other direct input **514** to the system. This input, along with input from a reservation system **516** from a computer network **518** (via an interfacing application **519**) can be fed into the prescription engine **520**, which generates and revises the prescription.

[0053] The prescription engine **520** creates the prescription based on business logic integrating the various data points collected by the other entities. The parameters used by the business logic include: the athlete's goal (acquired from the interview in the athlete profile); the most recent functional movement screen test; the achievement of past prescriptions (based on percent of peak power); the athlete's past attendance record; the athlete's current state(s) in activity progression(s) from the user database **522**; the athlete's the response to a current "how do you feel?"-type question; the athlete's multi-day training plan with the location of the equipment used (e.g., on-site or off-site) for each day; and the amount of time the athlete currently has available for the present training session.

[0054] The prescription is stored in a prescription database **528**, and can also be edited directly by a supervisory professional trainer via a prescription editor **526**. The prescription database **528** holds the prescription information for each athlete in the system, including prescriptions created for future

use and the results of past performance. The prescription database **528** also includes one or more prescription containers, which maintain all the pieces of the prescription and which control delivery of the information to a rendering engine **536**.

[0055] The rendering engine **536**, receives input from the prescription container, a movement database **530** and a content database **532**. The movement database **530** stores all of the movements that can be part of a training prescription, matched with equipment resources that match location of workout (e.g., training facility, home, gym, hotel, etc.). The content database **532** stores video and metadata that accompanies each movement. Each of these databases may be driven by the content management system (CMS) **534**. The rendering engine **536** creates presentation layer according to specific output and will drive both the exercise equipment in the training facility and the remote website (when it is being used by the athlete while away from the training facility).

[0056] The rendering engine **536** will generate output in several different formats, including: (1) the format **540** required by the exercise devices **550** at the training facility; an HTML or XML format **542** for transmission to a partner Web site **552**; a portable document format (PDF) **544** for remote downloading by the athlete; a personal storage device format **546** (e.g., the iPOD format) for use by the athlete while traveling; and any other format **548** that could be needed by the athlete.

[0057] In one embodiment, the system could embed sensors, such as accelerometers, in pieces of exercise equipment to collect data about the exact movements of the athlete. The system could also use sensors to determine exactly which weight settings an athlete applies to a weight training machine to ensure compliance with the prescription. Embedded sensors (along with wireless transmitters) could be used with dumbbells, barbells and other exercise implements.

[0058] The above described embodiments, while including the preferred embodiment and the best mode of the invention known to the inventor at the time of filing, are given as illustrative examples only. It will be readily appreciated that many deviations may be made from the specific embodiments disclosed in this specification without departing from the spirit and scope of the invention. Accordingly, the scope of the invention is to be determined by the claims below rather than being limited to the specifically described embodiments above.

What is claimed is:

1. A system for training an athlete during a training period, comprising:

- a. a digital system programmed to:
 - i. receive a plurality of inputs regarding a state of the athlete and a training goal for the athlete;
 - ii. employ an expert system to generate a training prescription for the athlete, wherein the expert system mimics a thought process of an athlete training professional and wherein the prescription includes a listing of training activities to be completed during each of a plurality of training sessions during the training period; and
 - iii. generate a plurality of control outputs that correspond to the listing of training activities, each control output corresponding to a training activity listed in the prescription and providing an indicating of a training parameter relating to the training activity; and

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- b. an exercise apparatus that includes at least one activity device, the activity device configured to facilitate the athlete performing a predetermined exercise, the activity device configured to receive the control output from the digital system and to adjust an exercise parameter so as to correspond to the training parameter indicated by the control output, the activity device configured to generate an electronic result output indicative of use by the athlete of the activity device wherein the result output is transmitted to the digital system.
2. The system of claim 1, wherein the exercise apparatus includes at least one sensor that is configured to measure a performance of the athlete.
3. The system of claim 2, wherein the digital system is responsive to the sensor and wherein the digital system is further configured to modify the prescription based on the performance of the athlete measured by the sensor.
4. The system of claim 2, wherein the performance of the athlete comprises a measurement selected from a group consisting of: a metabolic state of the athlete; a power level exerted by the athlete; an energy level expended by the athlete and combinations thereof.
5. The system of claim 4, wherein the digital system is configured to modify an operational parameter of the exercise apparatus so as to cause the metabolic state of the athlete to tend toward a preselected target metabolic state.
6. The system of claim 2, wherein the measured performance of the athlete comprises a measurement of how the athlete interacts with the exercise device.
7. The system of claim 1, wherein the digital system is configured as a server that is coupled to a plurality of exercise apparatuses.
8. The system of claim 1, wherein the prescription includes a nutritional component that includes a listing of specific nutritional requirements that need to be met by the athlete at specific times during the training period.
9. The system of claim 8, wherein the nutritional component includes an instruction to the athlete to consume a preselected nutritional substance.
10. The system of claim 1, wherein the training prescription further prescribes at least one recovery activity to be executed by the athlete.
11. The system of claim 1, wherein the plurality of inputs regarding a current state of the athlete comprises physical data indicative of a physical state of the athlete.
12. The system of claim 11, wherein the physical data comprises results of measurements of a performance by the athlete of at least one physical task.
13. The system of claim 11, wherein the physical data comprises at least one measured physical parameter that describes at least one attribute of the athlete's physique.
14. The system of claim 1, wherein the plurality of inputs regarding a current state of the athlete comprises an input from the athlete regarding a perception by the athlete of the state of the athlete.
15. The system of claim 1, wherein the digital system is programmed to query the athlete regarding a new physical state of the athlete before at least one of the training sessions and wherein the digital system is further configured to modify the prescription based on the new physical state.
16. The system of claim 1, wherein the digital system is programmed to query the athlete regarding a new physical state of the athlete during at least one of the training sessions

and wherein the digital system is further configured to modify the prescription based on the new physical state.

17. The system of claim 1, wherein the digital system is further programmed to communicate to a nutrition bar a description of a nutritional serving to be supplied to the athlete at a predetermined time.

18. The system of claim 1, wherein the digital system is coupled to a global computer network and is configured to receive input from a remote station indicative of training activities performed by the athlete while the athlete is away from the exercise apparatus.

19. The system of claim 1, wherein the exercise apparatus comprises a strength training apparatus

20. The system of claim 1, wherein the exercise apparatus comprises an energy system development apparatus.

21. An athletic training station for training an athlete, comprising:

- a. an exercise apparatus configured to facilitate performance of a plurality of exercises by the athlete;
- b. a vibration platform, configured to generate vibrations of a preselected amplitude and a preselected frequency, disposed in a position relative to the strength training apparatus so that the athlete is subjected to the vibrations when performing the plurality of exercises; and
- c. a control circuit that is coupled to the strength training apparatus and for the vibration platform and that is configured to set operational parameters for the strength training apparatus and for the vibration platform in response to a predefined stimulus.

22. The athletic training station of claim 21, wherein the control circuit is coupled to a digital system, wherein the digital system is configured to transmit to the control circuit information regarding an exercise prescription that is prescribed for the athlete.

23. The athletic training station of claim 22, further comprising a video monitor that is coupled to the athletic training station and that is configured to transmit instructional information to the athlete regarding at least one exercise that is included in the prescription.

24. The athletic training station of claim 23, wherein the instructional information comprises audiovisual content demonstrating how an exercise is to be performed.

25. The athletic training station of claim 21, wherein the exercise apparatus comprises a strength training apparatus.

26. The athletic training station of claim 25, wherein the strength training apparatus includes at least one sensor that is configured to sense information about an exercise performed by the athlete with the strength training apparatus and wherein the control circuit is coupled to the digital system, wherein the control circuit is configured to transmit to the digital system the information about the exercise.

27. The athletic training station of claim 26, wherein the digital system is configured to analyze the information received from the control circuit and to modify an athletic training prescription stored in the digital system corresponding to the athlete.

28. The athletic training station of claim 25, wherein the strength training apparatus is configured to set at least one exercise resistance parameter in response to an input from the control circuit, based on information corresponding to the prescription received from the digital system.

29. The athletic training station of claim 25, wherein the strength training apparatus comprises an electronically controllable air resistance strength training apparatus.

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30. The athletic training station of claim **22**, wherein the exercise apparatus comprises an energy system development apparatus that includes an second control circuit that is coupled to the digital system so as to receive at least one control input from the digital system, wherein the energy system development apparatus is configured to set at least one performance parameter so as to correspond to a value of one the control input.

31. An exercise system for training an athlete, comprising:

- a. a controllable exercise apparatus that includes at least one exercise function and that is configured to set the exercise function to a selected value within a range of values in response to a control signal;
- b. a metabolic sensor that is configured to sense a metabolic parameter of the athlete and to generate a metabolic signal representative thereof;
- c. a processor that is responsive to the metabolic signal and configured to:
 - i. compare the metabolic parameter to a preselected value;
 - ii. modify the control signal so that the selected value of the exercise function will cause the metabolic parameter of the athlete to tend to the preselected value.

32. The exercise system of claim **31**, wherein the controllable exercise apparatus comprises a resistance training device and wherein the selected value comprises a resistance value.

33. The exercise system of claim **31**, wherein the controllable exercise apparatus comprises a treadmill and wherein the selected value comprises a selected one of an angle and a speed at which the treadmill is set.

34. A method for training an athlete, operable on a digital system that includes a memory upon which is stored a program, the method comprising the actions of:

- a. querying the athlete regarding at least one goal that the athlete seeks to achieve;
- b. receiving data indicative of a physical state of the athlete; and
- c. executing an expert system on the digital system that mimics a thought process employed by an athletic training professional to generate a training prescription, based on the goal and the physical state of the athlete, the prescription setting forth a schedule of when each of a plurality of exercise sessions is to occur and which exercise activities are to occur during each session, the prescription also setting forth a description of a recovery activity that is to occur as a part of each session and a nutritional activity that is to occur after each session.

35. The method of claim **34**, further comprising the action of transmitting data from the digital system to an exercise apparatus so as to configure the exercise apparatus according to the prescription.

36. The method of claim **34**, wherein the training prescription includes a plurality of training activities that is designed to achieve the goal that the athlete seeks to achieve.

37. The method of claim **36**, wherein the training activities include a plurality of exercises, each of which is to occur at a time determined by the expert system.

38. The method of claim **34**, further comprising the actions of:

- a. receiving data indicative of a revised physical state of the athlete after completion of one of the exercise sessions; and
- b. executing the expert system so as to revise the prescription based on the revised physical state.

39. The method of claim **34**, further comprising the actions of:

- a. receiving data from the athletic training station regarding performance by the athlete; and
- b. executing the expert system so as to revise the prescription based on the data received from the athletic training station.

40. The method of claim **34**, further comprising the action of transmitting instructional information to an athletic training station, the instructional information relating to an exercise that is part of the training prescription.

41. The method of claim **34**, wherein the data regarding a current physical state of the athlete includes data regarding a physical condition of the athlete.

42. The method of claim **34**, wherein the data regarding a current physical state of the athlete includes data regarding a measured performance metric relative to the athlete.

43. The method of claim **34**, further comprising the actions of:

- a. receiving a revised goal for the athlete; and
- b. revising the prescription to facilitate achieving the revised goal.

44. The method of claim **43**, wherein the revised goal includes a desire to be trained for a specific athletic event.

45. The method of claim **34**, further comprising the actions of:

- a. receiving an identification of the athlete; and
- b. taking a predetermined action based on the identification of the athlete.

46. The method of claim **45**, wherein the predetermined action comprises:

- a. directing the athlete to a specific athletic training station; and
- b. configuring the specific athletic training station according to the training prescription corresponding to the athlete.

* * * * *

EXHIBIT 17

US007955235B2

(12) **United States Patent**
Keiser

(10) **Patent No.:** **US 7,955,235 B2**
(45) **Date of Patent:** ***Jun. 7, 2011**

(54) **EXERCISE APPARATUS**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

3,074,716 A	1/1963	Mitchel et al.	
3,385,590 A *	5/1968	Avner	267/64.24
3,387,843 A	6/1968	Chandler	
3,451,271 A	6/1969	Knoblauch	
3,515,248 A *	6/1970	Kyllonen	188/202
3,692,296 A	9/1972	Higginbotham	
3,784,194 A	1/1974	Perrine	
3,822,599 A	7/1974	Brentham	
4,050,310 A	9/1977	Keiser	
4,227,689 A	10/1980	Keiser	
4,247,098 A	1/1981	Brentham	
4,256,302 A	3/1981	Keiser et al.	

(Continued)

(21) Appl. No.: **12/697,103**

(22) Filed: **Jan. 29, 2010**

(65) **Prior Publication Data**

US 2010/0137114 A1 Jun. 3, 2010

Related U.S. Application Data

(60) Continuation of application No. 11/669,030, filed on Jan. 30, 2007, now Pat. No. 7,686,749, which is a division of application No. 10/294,476, filed on Nov. 13, 2002, now Pat. No. 7,172,538.

(60) Provisional application No. 60/332,468, filed on Nov. 13, 2001.

(51) **Int. Cl.**
A63B 21/008 (2006.01)

(52) **U.S. Cl.** **482/112**

(58) **Field of Classification Search** 482/111-112, 482/139, 148, 92-96, 97-100, 51, 62
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

325,404 A *	9/1885	Forest	482/102
1,015,071 A	1/1912	Reach	
2,932,509 A	4/1960	Zinkin	

FOREIGN PATENT DOCUMENTS

FR 2581550 A1 11/1986

(Continued)

OTHER PUBLICATIONS

PCT International Search Report, Jan. 12, 2004.

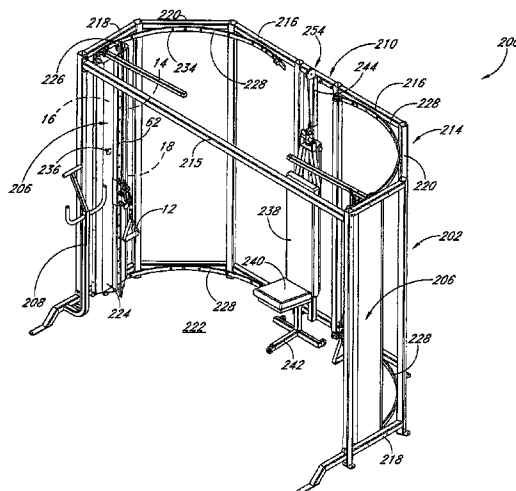
Primary Examiner — Lori Baker

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(57) **ABSTRACT**

An exercise apparatus includes a compact resistance unit that houses a pneumatic cylinder. The cylinder is connected to a pulley wheel that moves at least toward the cylinder. A main cable extends about a portion of the pulley wheel. One end of the main cable is fixed to the unit housing and the other end is attached to a pulley block of a block-and-tackle mechanism. A user cable extends through the block-and-tackle mechanism and is connected to a handle. The pneumatic cylinder resists movement of the handle away from the unit.

21 Claims, 15 Drawing Sheets



US 7,955,235 B2

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U.S. PATENT DOCUMENTS

4,257,593 A	3/1981	Keiser	5,403,257 A *	4/1995	Lehtonen	482/112
4,326,707 A	4/1982	Strecker	5,526,692 A	6/1996	Keiser	
4,500,089 A	2/1985	Jones	5,558,607 A *	9/1996	Darling	482/95
4,549,733 A *	10/1985	Salzer	5,776,040 A *	7/1998	Webb et al.	482/98
4,609,190 A	9/1986	Brentham	5,890,996 A	4/1999	Frame et al.	
4,700,946 A	10/1987	Breunig	6,142,919 A *	11/2000	Jorgensen	482/121
4,720,099 A	1/1988	Carlson	6,375,598 B1	4/2002	Frame et al.	
4,722,525 A	2/1988	Brentham	6,447,430 B1 *	9/2002	Webb et al.	482/98
4,730,829 A	3/1988	Carlson	7,094,185 B2 *	8/2006	Greenland	482/100
4,911,436 A *	3/1990	Lighter	7,172,538 B2 *	2/2007	Keiser	482/140
4,915,379 A	4/1990	Sapp	7,608,024 B2 *	10/2009	Sechrest et al.	482/94
4,976,426 A	12/1990	Szabo et al.	7,625,321 B2 *	12/2009	Simonson et al.	482/103
5,018,725 A *	5/1991	Cook	7,686,749 B2 *	3/2010	Keiser	482/112
5,044,632 A	9/1991	Jones	2002/0025890 A1	2/2002	Keiser	
5,060,939 A	10/1991	Oswald et al.	2006/0189462 A1 *	8/2006	Pearson et al.	482/142
5,102,122 A *	4/1992	Piane et al.	2007/0161470 A1 *	7/2007	Berryman	482/94
5,114,389 A	5/1992	Brentham	2010/0137114 A1 *	6/2010	Keiser	
5,145,479 A	9/1992	Olschansky et al.				
5,158,516 A	10/1992	Johnson				
5,310,394 A	5/1994	Kallios				
5,312,315 A	5/1994	Mortensen et al.				
5,336,145 A	8/1994	Keiser				

FOREIGN PATENT DOCUMENTS

FR	2645032	10/1990
GB	2240727	8/1991

* cited by examiner



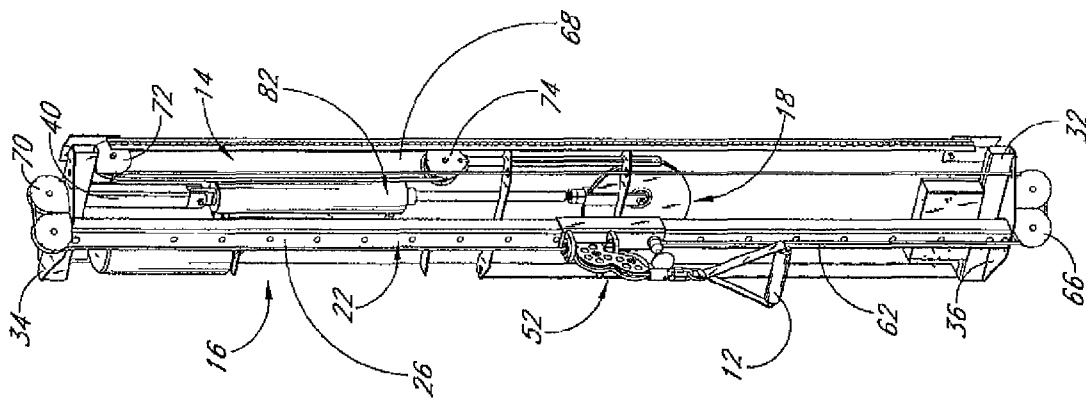
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FIG. 2

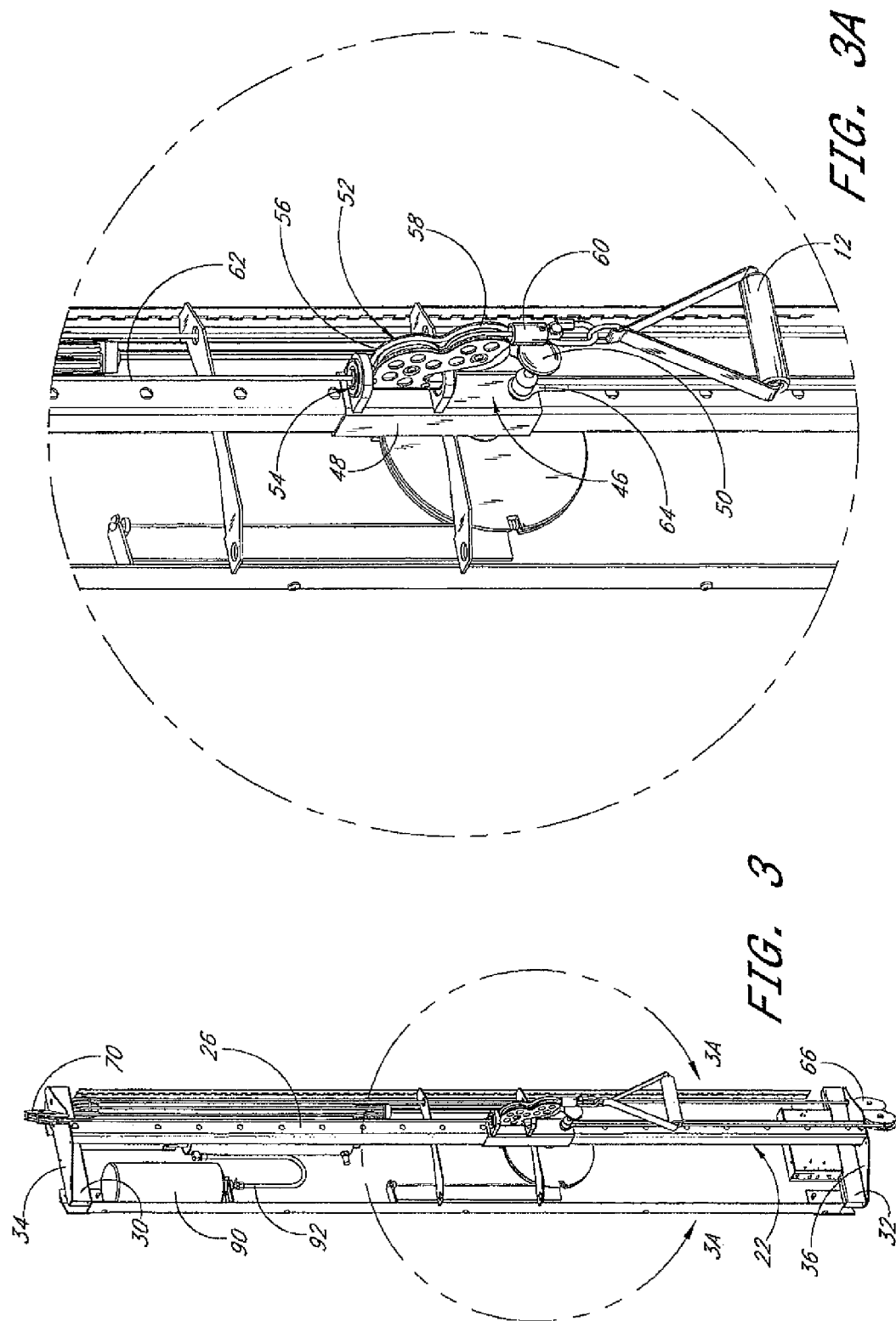


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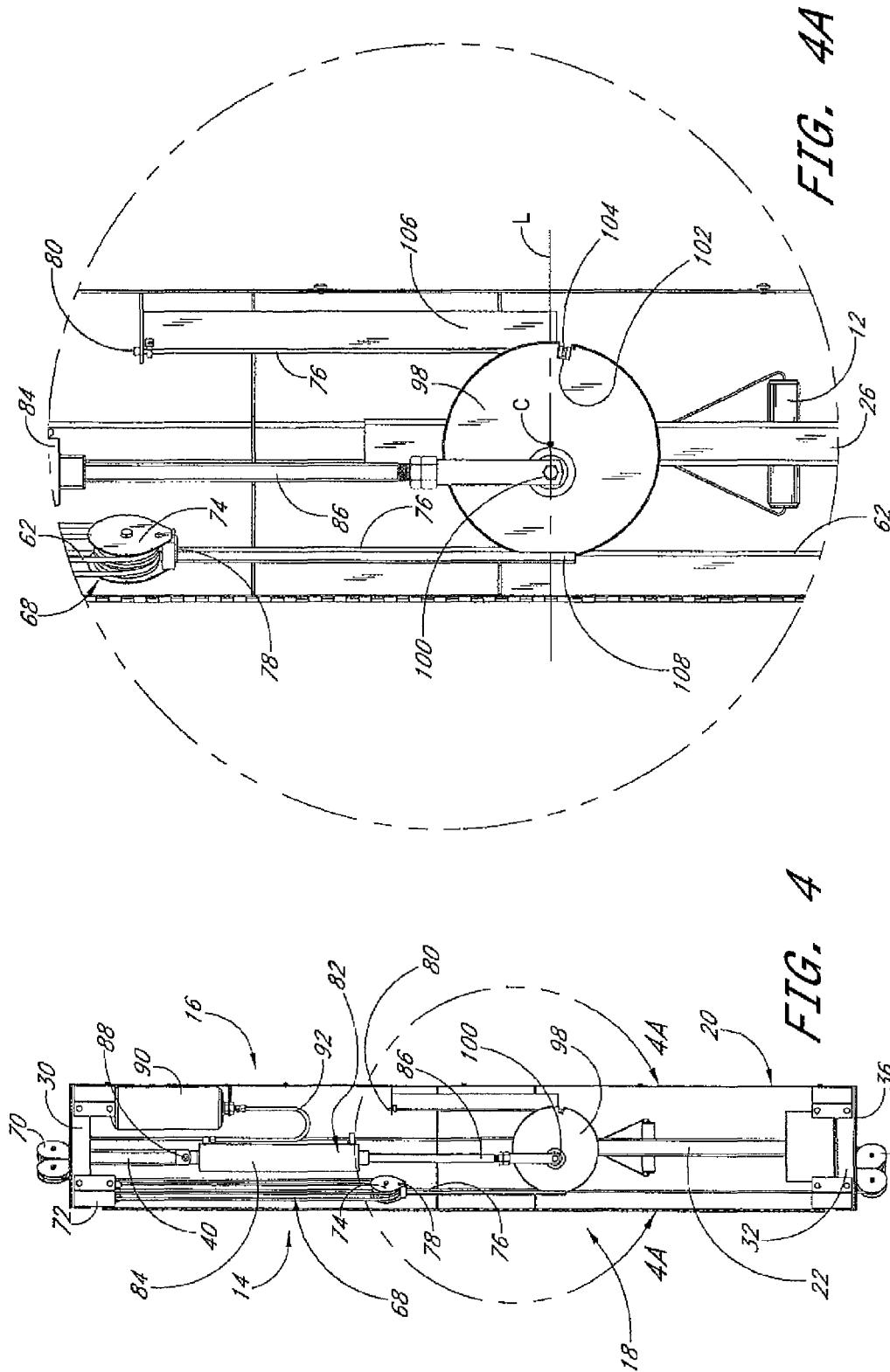


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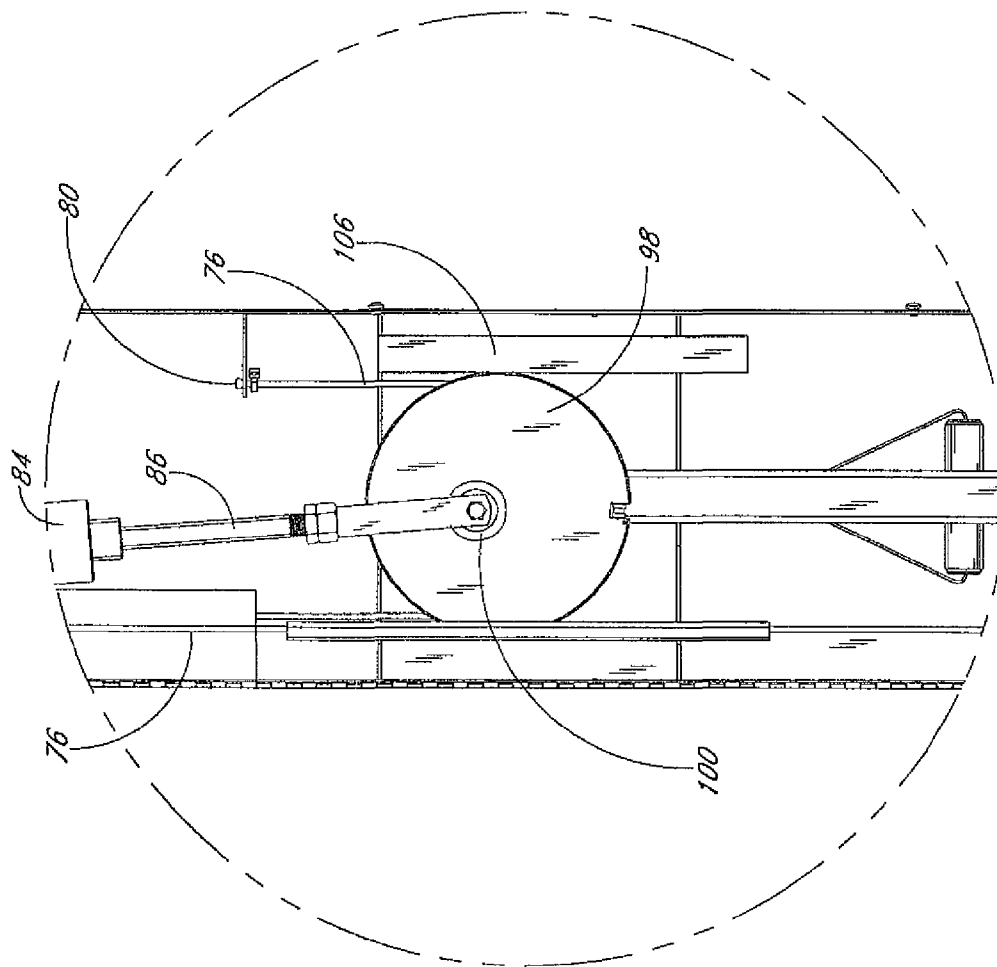


FIG. 4B

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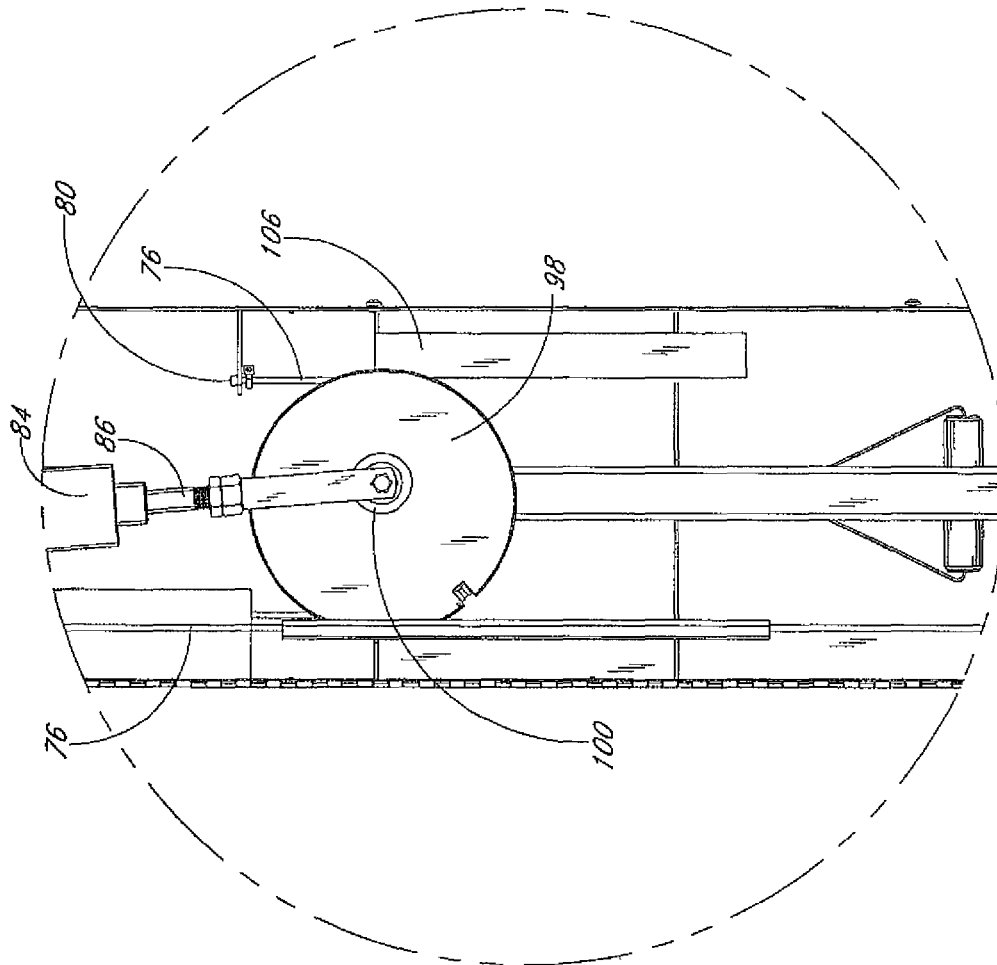


FIG. 4C

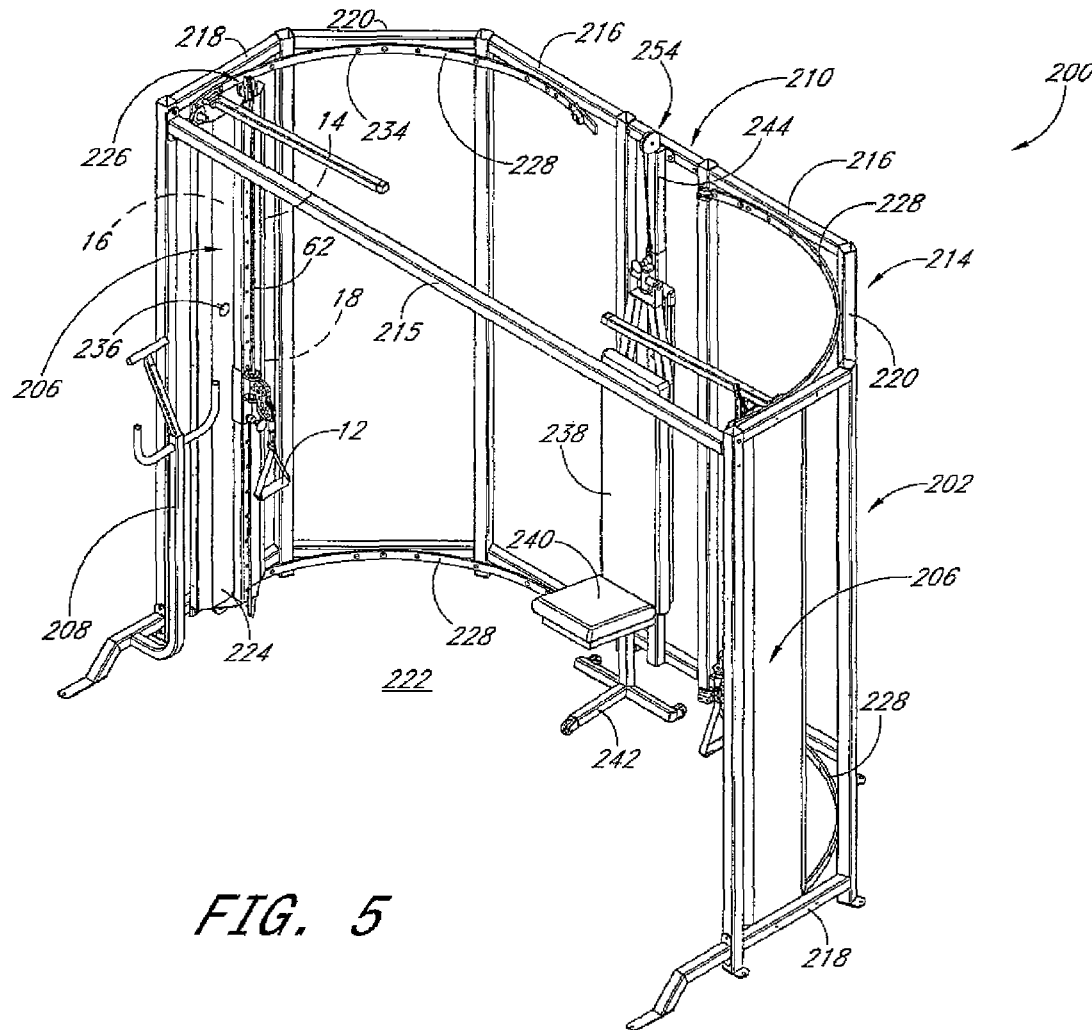


FIG. 5

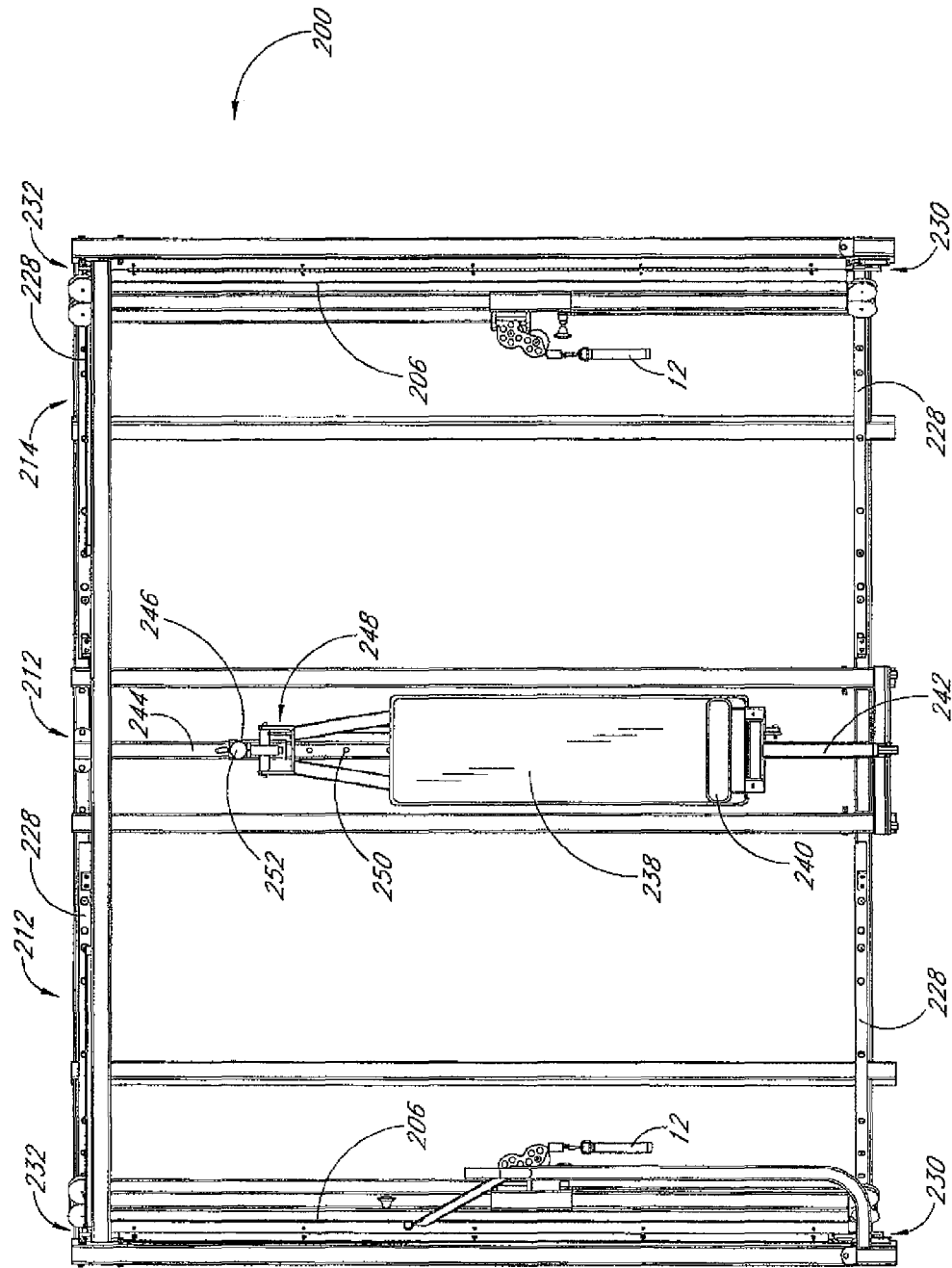


FIG. 6

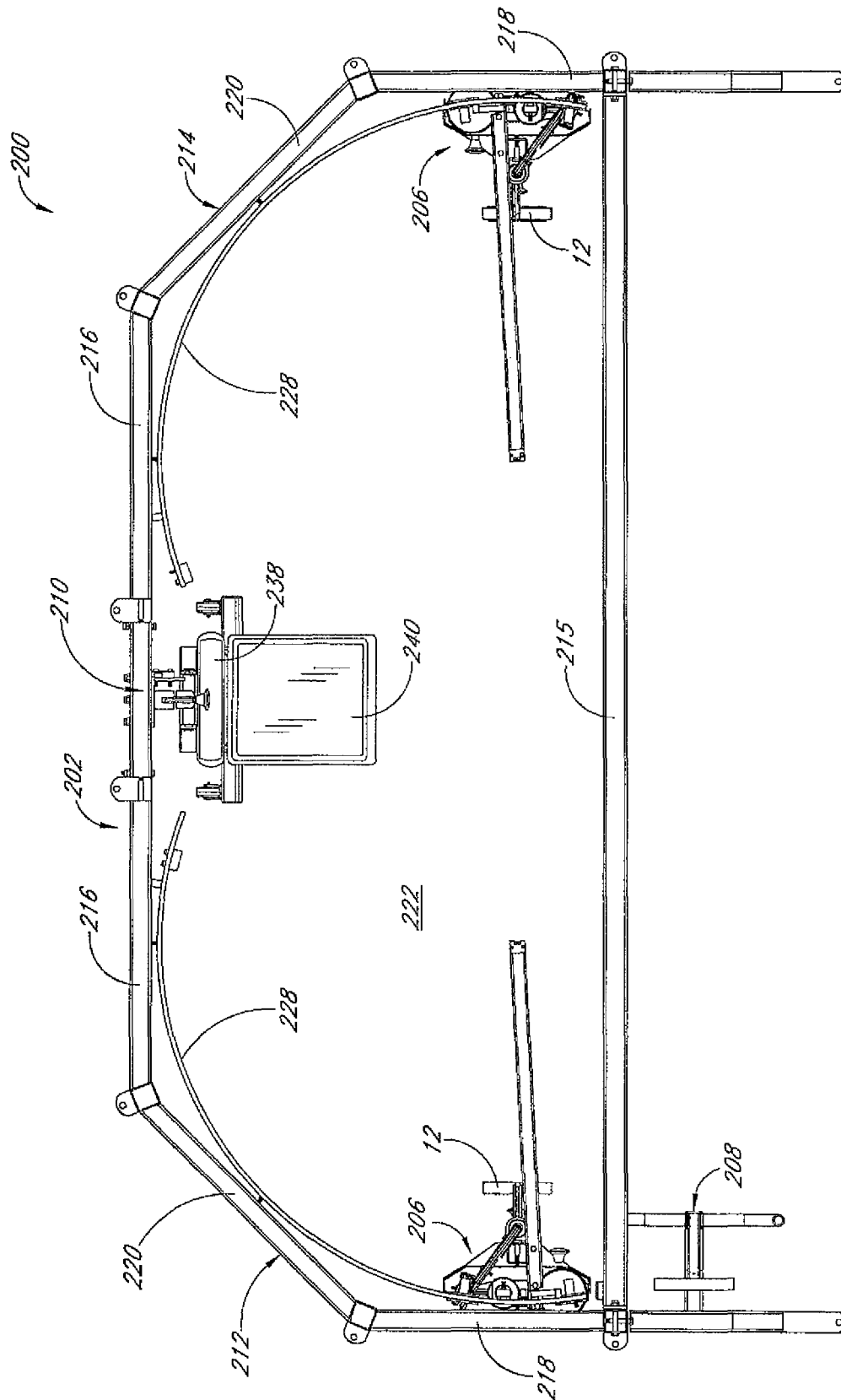


FIG. 7

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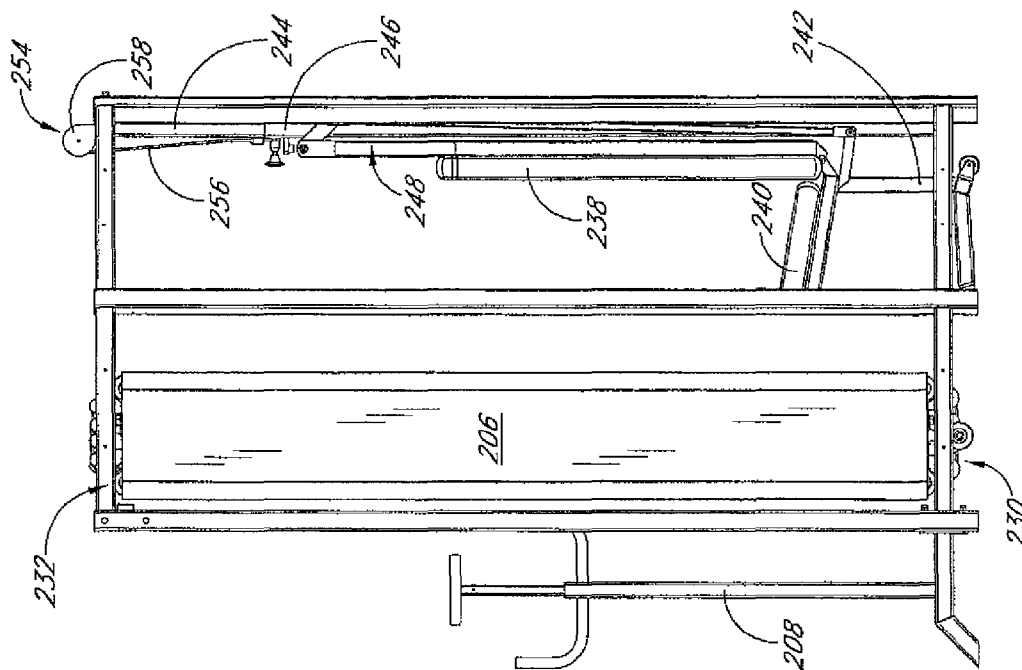


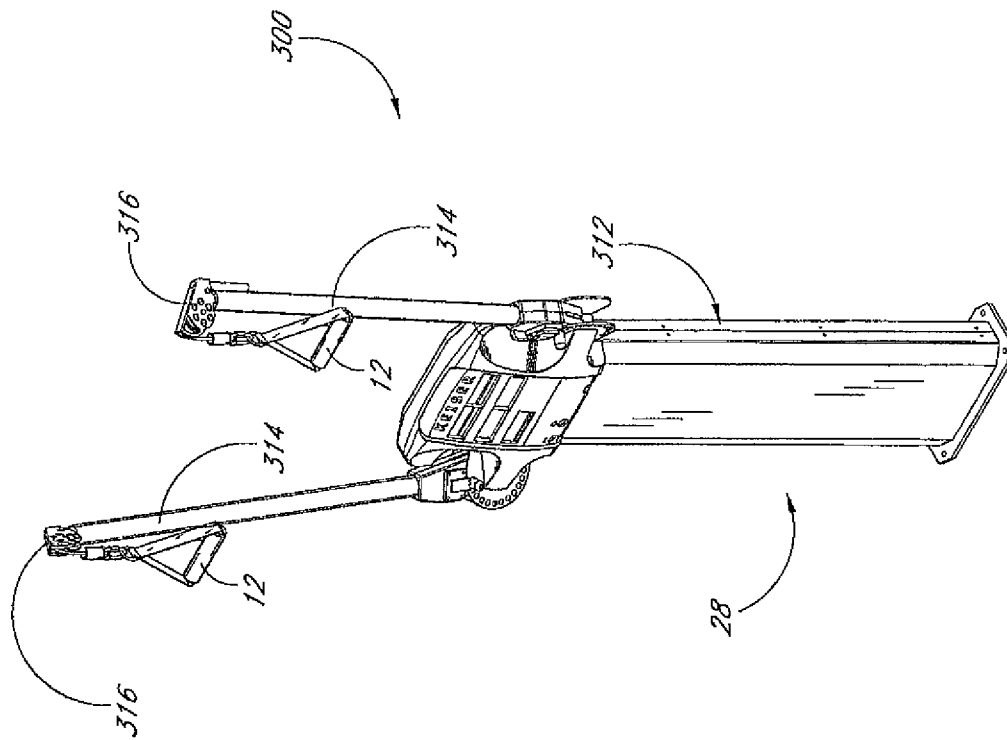
FIG. 8

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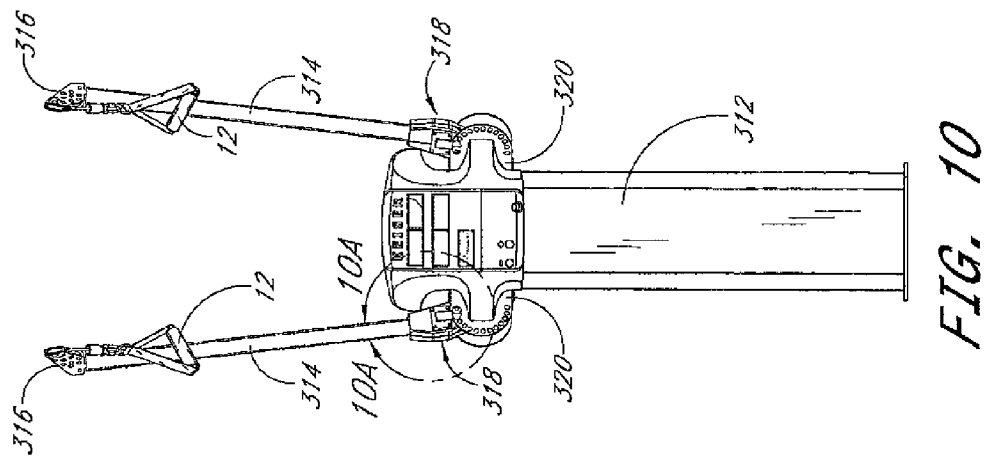
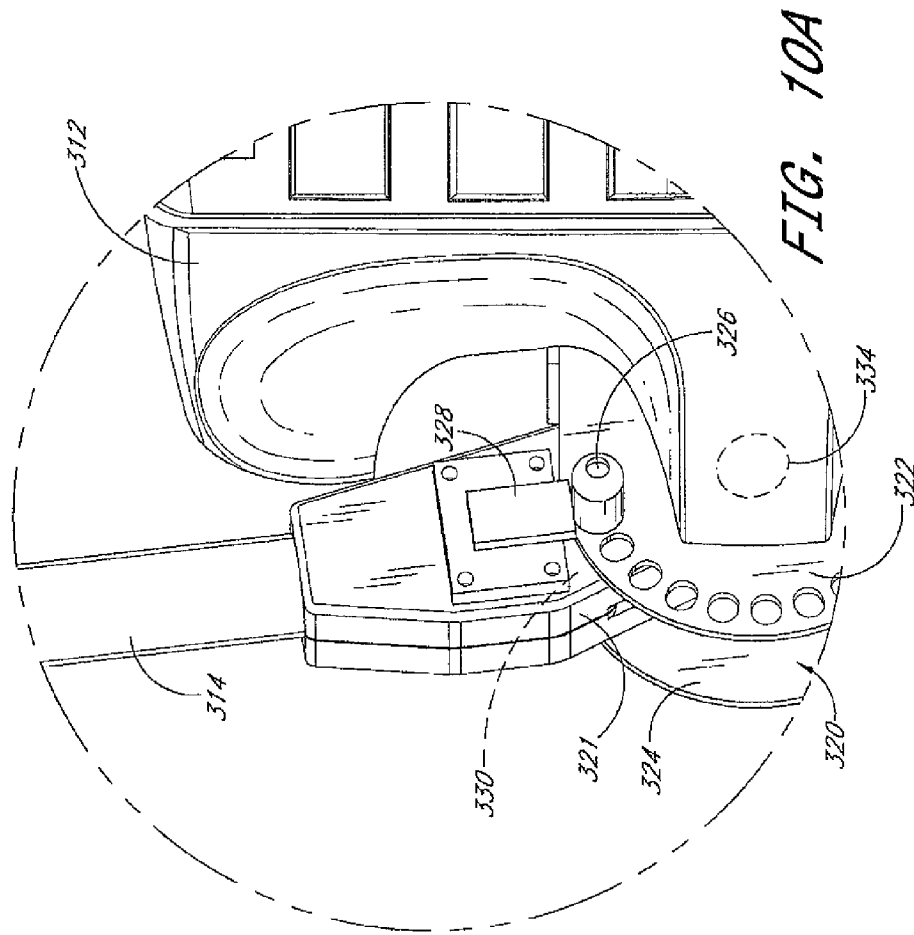


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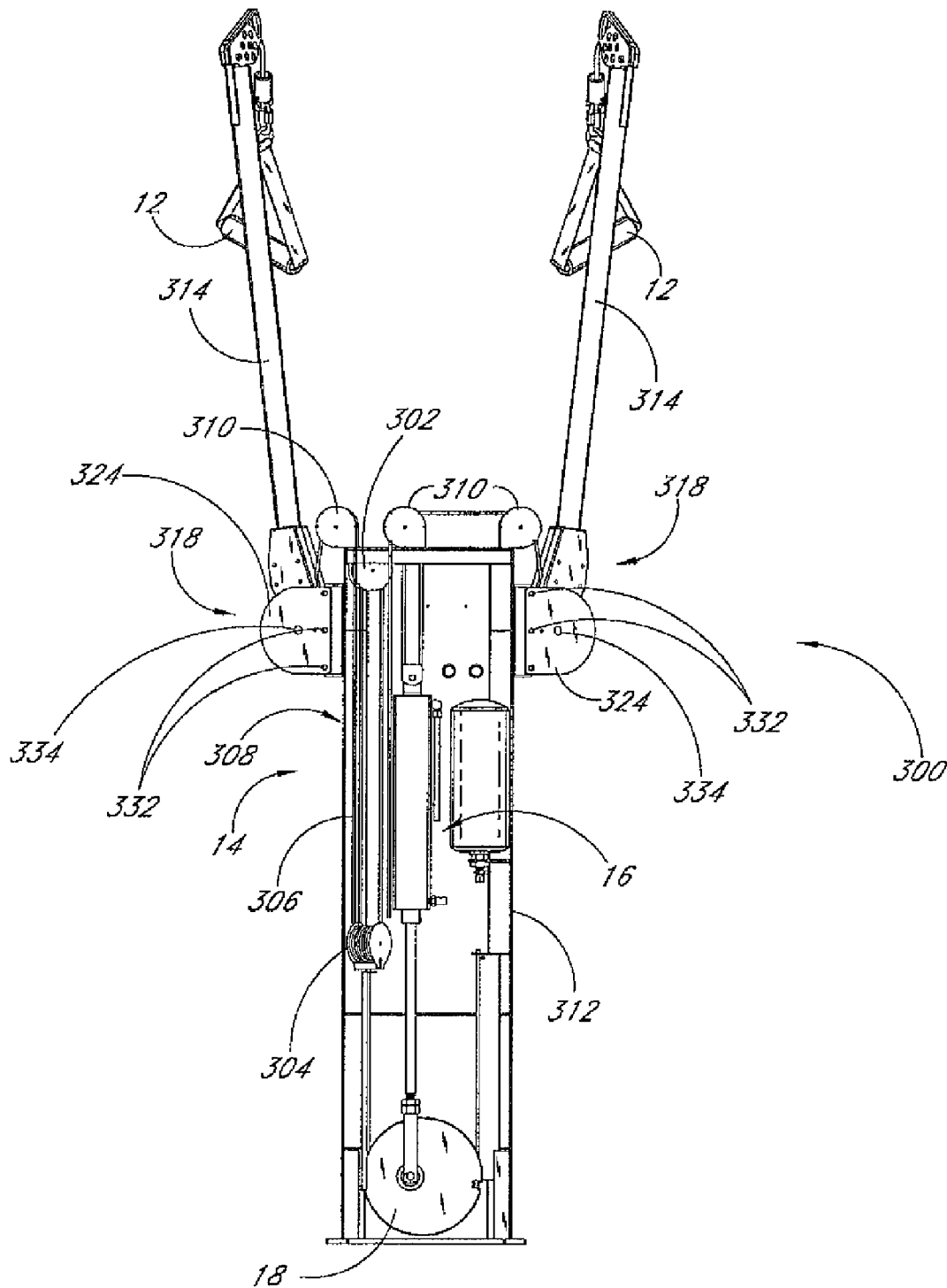


FIG. 11

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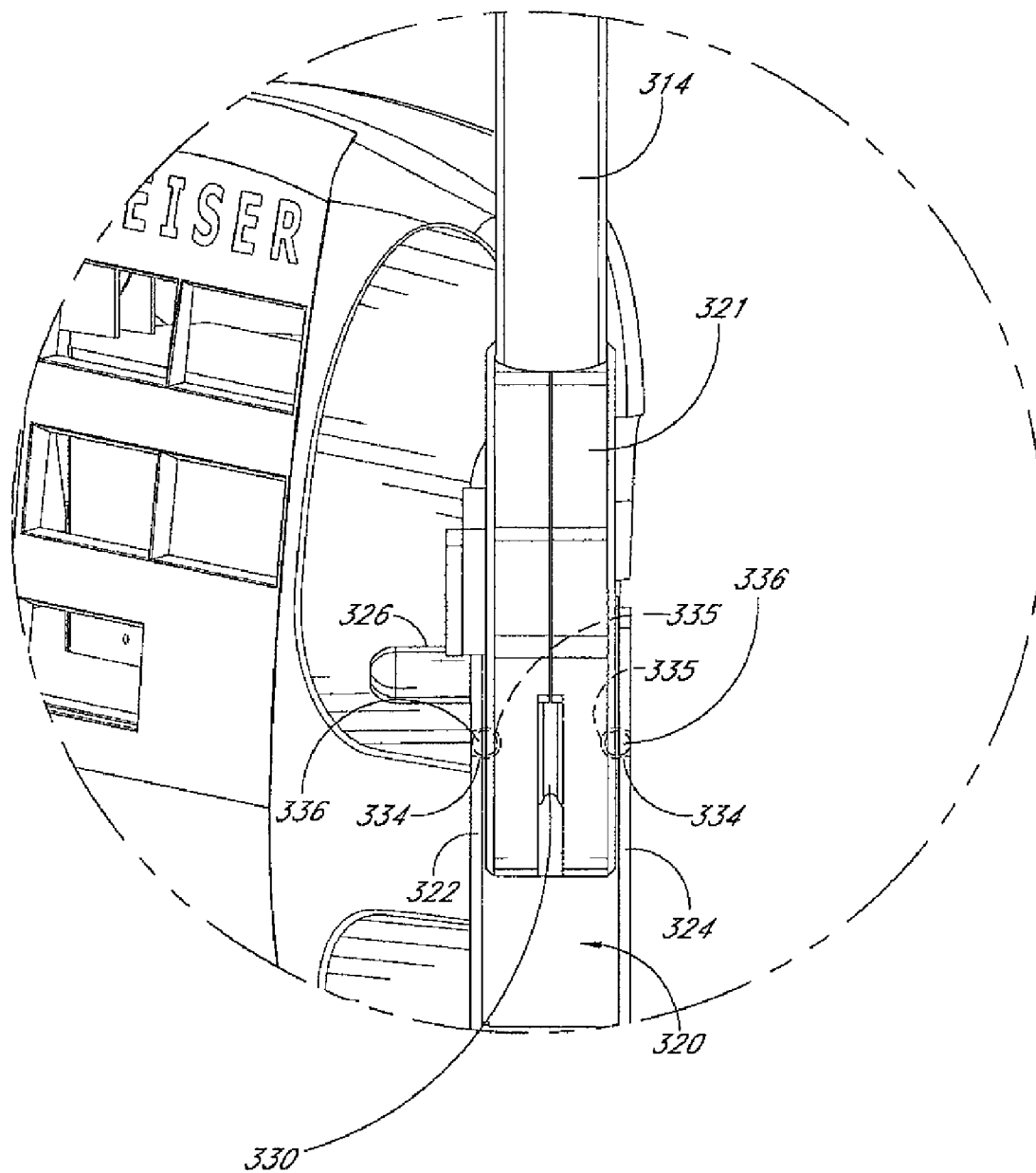


FIG. 12

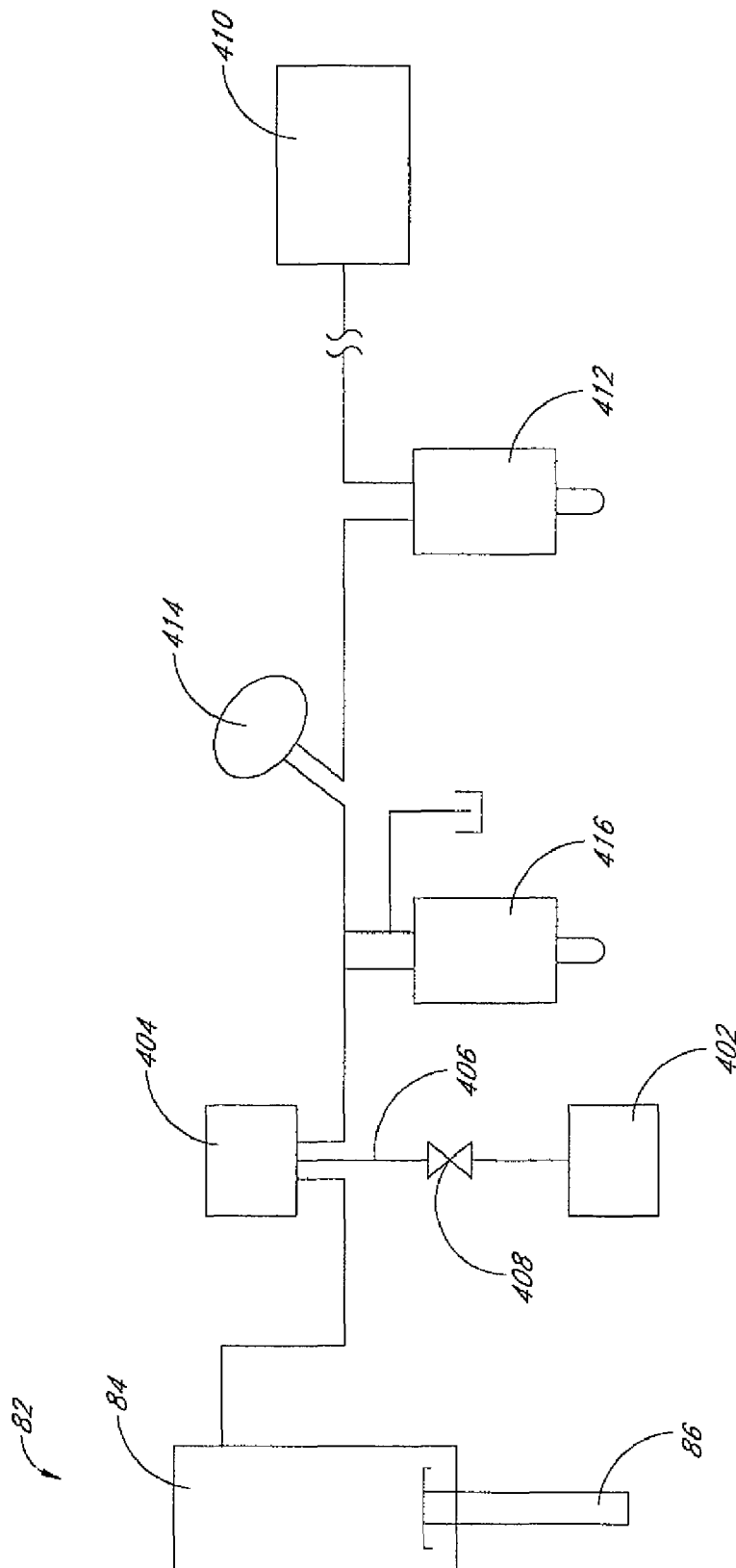


FIG. 13

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EXERCISE APPARATUS

RELATED APPLICATIONS

This application is a continuation of application Ser. No. 11/669,030, filed on Jan. 30, 2007, which is a divisional of U.S. patent application Ser. No. 10/294,476, filed Nov. 13, 2002, now issued as U.S. Pat. No. 7,172,538 on Feb. 6, 2007, which claims priority under 35 U.S.C. §119(e) to U.S. Provisional Patent Application Ser. No. 60/332,468, filed Nov. 13, 2001, all of which are hereby expressly incorporated by reference in their entireties.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an exercise apparatus and, more particularly, to an adjustable exercise apparatus that can be used for a multitude of exercises.

2. Description of Related Art

Many exercise devices have been developed of a “weight type” in which weights provide resistance to the exertion of muscular force. Such machines commonly employ weight stacks that allow a user to vary the weight lifted during the exercise. U.S. Pat. Nos. 6,447,430, 5,776,040, and 4,500,089 are examples of such machines.

Weight stack machines often, in normal use, do not provide a consistent resistance. A weight lifter normally thinks that 100 pounds of weight will provide 100 pounds of resistance throughout the exercise stroke; however, this is true only if the weight is moved at a slow and generally constant speed. If the weight lifter quickly moves the weight, the changes in speed of movement will cause the weight to change. Accordingly, manufacturers of weight stack machines commonly instruct those training on their machines to train at a speed of out on two seconds and back on four seconds, thus keeping the speed slow enough to make the acceleration forces insignificant. However, if a user accelerates the weight during the exercise stroke, the resistance force will change.

Pneumatic exercise equipment has been developed in response to this shortcoming of weight stacks. Such exercise equipment simulates the desired characteristics of a weight stack exercise machine by easily permitting the weight lifter to increase or decrease the resistance; however, pneumatic exercise equipment also permits the weight lifter to increase speed without the resistance changing because such machines do not have a significant inertia of motion. Consequently, pneumatic exercise equipment ensures full muscular effort throughout the stroke.

Pneumatic exercise equipment commonly include a pneumatic cylinder with a piston rod that moves linearly. A piston divides the cylinder into two chambers. The rod is connected to the piston and extends through one of the chambers. The piston rod also is usually operatively connected to a handle or other user interface. As the user pushes (or pulls, depending upon which cylinder chamber is pressurized) on the handle, movement of the rod is resisted by air within the cylinder. This resistance to further movement provides exercise resistance.

Over the stroke of the rod within the cylinder, it can be expected that the resistance provided by the cylinder will increase as the rod is progressively pushed into the cylinder. To make this increase less dramatic, an air reservoir, also known as an accumulator, can be coupled with the cylinder through an air line. The air line allows air to flow between the cylinder and the accumulator and thus equalizes the air pressure between these components.

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The user can choose a preset resistance force by controlling the air pressure within the cylinder/accumulator assembly. A source of compressed air communicates with the accumulator through an air supply line. An air addition valve, a pressure gauge, and a bleed-off valve are interposed in the line. The pressure gauge preferably is configured to display the resistance force anticipated for the user rather than the actual air pressure within the system. To adjust the resistance force to a desired level, the user adds or removes air from the pneumatic system. Air is added by actuating the air addition valve. Air is removed by actuating the bleed-off valve. U.S. Pat. No. 4,257,593 discloses an example of a pneumatic exercise device.

Due to the nature of pneumatics, the resistance curve produced for a given air pressure as the piston rod is moves from an initial position to a fully retracted position (or fully extended position if pulled) remains substantially the same even though the speed at which the piston rod moves may vary. The resistance, however, will increase during the exercise stroke as the air compresses under the exerted force of the user.

SUMMARY OF THE INVENTION

The present exercise apparatus offers a range of adjustability and resistances so that a single piece of exercise equipment can be used to perform a multitude of different exercises. Another aspect of the exercise apparatus involves providing a pneumatic exercise apparatus that produces generally constant resistance throughout the entire exercise stroke. An additional aspect involves a compact pneumatic exercise apparatus that can be mounted to or supported by the floor, wall or other support structure.

In accordance with one aspect of the invention, an exercise apparatus is provided comprising a frame and a user interface (e.g., a handle) that is movable between a retracted position and an extended position. A pneumatic actuator is disposed on the frame and includes a cylinder and a piston rod. The piston rod extends from the cylinder along a stroke axis. A pulley wheel is rotatably connected to the piston rod and a cable is wrapped about at least a portion of the pulley wheel. The cable has a first cable end and a second cable end. The first cable end is fixed to the frame and the second cable end is coupled to the user interface.

Another aspect of the invention involves an exercise system comprising a station frame and a resistance unit being configured to provide an exercise resistance force. The resistance unit cooperates with a user interface and is movably connected to the station frame. In this manner, the resistance unit can be moved between at least a first position and a second position on the frame.

In a preferred mode, the exercise system comprises at least two resistance units. At least one of the units is movably connected to the frame, and preferably, both are movably connected to the frame.

In accordance with an additional aspect of the present invention, an exercise apparatus is provided that comprises a pneumatic cylinder, a first air reservoir and at least a second air reservoir. The pneumatic cylinder and the reservoirs are connected by at least one air equalization line so as to maintain generally equal air pressures within the cylinder and the reservoirs. The second reservoir selectively communicates with the first reservoir and the cylinder.

An additional aspect of the present invention involves a seat assembly that is movably connected to a frame of an exercise apparatus. In this manner the seat assembly can be moved between at least a first position and a second position. The seat assembly preferably includes a bottom that is con-

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nected to a support post. The support post has at least one wheel. The seat assembly can be connected to a guidepost of the frame, and preferably, the seat assembly can slide relative to the guidepost and be selectively fixed relative to the guidepost to vary its position and orientation.

For purposes of summarizing the invention and the advantages achieved over the prior art, certain aspects and advantages of the invention have been described herein above. Of course, it is to be understood that not necessarily all such aspects or advantages may be achieved in accordance with any particular embodiment of the invention. Thus, for example, those skilled in the art will recognize that the invention may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other aspects or advantages as may be taught or suggested herein.

All of these embodiments are intended to be within the scope of the invention herein disclosed. These and other embodiments of the present invention will become readily apparent to those skilled in the art from the following detailed description of the preferred embodiments having reference to the attached figures, the invention not being limited to any particular preferred embodiment(s) disclosed.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other features, aspects and advantages of the present invention will now be described with reference to the drawings of preferred embodiments, which are intended to illustrate and not to limit the present invention. The drawings comprise 13 figures.

FIG. 1 is a perspective view of a front side of a resistance unit configured in accordance with a preferred embodiment of the present invention.

FIG. 2 is a perspective view of the resistance unit of FIG. 1 with a cover assembly removed to expose several internal components of the resistance unit.

FIG. 3 is a perspective view similar to FIG. 2, but with the unit rotates to illustrate a left front side of the resistance unit of FIG. 1.

FIG. 3A is an enlarge view of the area within the circle 3A-3A of FIG. 3.

FIG. 4 is a rear plan view of the resistance unit of FIG. 1 with a rear cover removed.

FIG. 4A is an enlarged view of the area within the circle 4A-4A of FIG. 4 and illustrates a coupling mechanism that couples a resistance assembly to an extension mechanism when the coupling mechanism is in an initial position.

FIG. 4B illustrates the coupling mechanism of FIG. 4A as oriented approximately halfway through an exercise stroke.

FIG. 4C illustrates the coupling mechanism of FIG. 4A as orientated generally at the end of an exercise stroke (e.g., fully extended).

FIG. 5 is a front-side perspective view of exercise apparatus (or system) that defines an exercise zone and that is configured in accordance with another preferred embodiment of the present invention.

FIG. 6 is a front plan view of the exercise apparatus of FIG. 5.

FIG. 7 is a top plan view of the exercise apparatus of FIG. 5.

FIG. 8 is a side plan view of the exercise apparatus of FIG. 5.

FIG. 9 is a perspective view of an exercise apparatus configured in accordance with an additional embodiment of the present invention.

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FIG. 10 is a front plan view of the exercise apparatus of FIG. 9.

FIG. 10A is an enlarged view of the area within circle 10A-10A of FIG. 10 and illustrates a hinge assembly of the exercise apparatus of FIG. 9.

FIG. 11 is a rear plan view of the exercise apparatus of FIG. 9 with a rear cover removed.

FIG. 12 is a plan view of the hinge assembly of FIG. 9.

FIG. 13 is a schematic view of an additional embodiment of a resistance assembly that can be used with the exercise apparatus.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

The present exercise apparatus can take a variety of forms and can be used in a variety of manners as will be apparent from the description of the following embodiments. Additionally, some of the embodiments include a combination of some of the aspects and features described above, and others will include additional aspects and features. As noted above, not all of the aspects and features of the present invention need to be employed in a single embodiment.

Each illustrated embodiment includes a pneumatic resistance unit that allows for variable resistance and variable degrees and extensions of motion by the user. In addition, the resistance units are designed to permit the user to perform a wide variety of exercises to work various muscles or muscle groups with the same piece of equipment. As will be apparent from the following description of the preferred embodiments, the resistance unit can be stationary or movable, and can include movable pulleys that allow the user to change the direction in which the user pushes or pulls during a set of the exercise repetitions. Various aspects, features and advantages of the following apparatuses, however, can be used with other types of resistance mechanisms (for example, but without limitation, weight stacks), as described below. Accordingly, the following will first describe the resistance unit as a stationary exercise apparatus and then will describe additional embodiments of the exercise apparatus that can employ the resistance unit. Like reference numbers will be used to indicate similar components among the illustrated preferred embodiments.

Resistance Unit

With reference initially to FIGS. 1-4C, the resistance unit 10 (i.e., power module) in this embodiment forms an exercise apparatus that can be mounted to a support structure, such as, for example, but without limitation, a wall, a frame or a post. The resistance unit 10 includes a user interface 12, which the user grips, an extension mechanism 14 that provides a range of movement to the user interface 12, a resistance assembly 16 that resists movements of the user interface 12, a coupling mechanism 18 that couples the resistance assembly 16 to the extension mechanism 14, and a housing 20. The housing 20 supports these components and preferably encloses the resistance assembly 16, the coupling mechanism 18, and at least a portion of the extension mechanism 14.

In the embodiments described herein, the user interface 12 takes the form of a handle. The user interface, however, can take other forms. For example, the user interface can be a band (preferably of an adjustable size) that is sized to fit around a portion of the user's body, e.g., a waistband or an ankle band. The user interface additionally can be a bar, a foot pedal, or other lifting equipment. The user interface thus can be any article or mechanism that a user acts against or interacts with and that is attached, either directly or indirectly, to the extension mechanism 14.

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The user interface **12** preferably is moved between two positions during an exercise and can be moved from one extreme position to another extreme position. In the illustrated embodiment, the handle **12** normally resides in a retracted position with a cable end to which the handle **12** is attached being fully retracted up to the unit **10**. A user can move the handle **12** from the retracted position to an extended position in which the cable end of extension mechanism **14** is pulled to its farthest position from the housing **20**. The exercise movement can involve movement between any two positions between (and possibly including) the retracted and extended positions in order to accommodate different exercises and different size weight lifters.

As seen in FIGS. 1-3, the housing **20** is substantially rigid and is defined by a frame **22** and a cover assembly **24**. The frame **22** of the illustrated embodiment, as best seen in FIGS. 2 and 3, includes a vertical guidepost or tract **26** that is disposed on a front side **28** of the housing **20**. An upper cross member **30** and a lower cross member **32** are connected at the upper and lower ends of the guidepost **26** via upper and lower brackets **34**, **36**, respectively. A front cover **38** is disposed behind (but spaced apart from) the guidepost **26** and is attached to the upper and lower cross members **30**, **32** and brackets **34**, **36**. A plurality of internal ribs and brackets are attached to the front cover **38** and to the upper and lower cross members **30**, **32** to support various components of the extension mechanism **14**, the coupling mechanism **18**, and the resistance assembly **16** within the housing **20**, as well as any electronic controls for the resistance unit **10**. The ribs not only increase the rigidity of the housing **20**, but also include holes through which a cable of the extension mechanism **14** passes in order to ensure that the cable maintains its position within the housing **20**. Additionally, a cylinder-mounting bar **40** depends from the upper cross member **30**.

In the illustrated embodiment, the vertical guidepost **26** extends along a central plane that divides the unit **10** into first and second halves (right and left halves as viewed from the front). From the exterior, the halves preferably have symmetrical configurations. Inside, however, the cylinder-mounting bar **40** is disposed at a position slightly offset from the center plane (i.e., generally offset to one side of the vertical guidepost **26**).

The cover assembly **24** additionally includes a back cover **42**. A side hinge **44** connects the back cover **42** to the front cover **38**. The opposite side of the covers **38**, **42** are connected together by removable fasteners or one or more latches. In this manner, the interior of the unit **10** can be readily opened for servicing or inspection.

In the illustrated embodiment, as best seen in FIGS. 3 and 3A, the vertical guidepost **26** preferably comprises a square steel tube and has a series of locking holes formed through a sidewall thereof. The guidepost **26**, however, can have other configurations (e.g., an I-beam configuration).

The guidepost **26** supports a cable guide mechanism **46** that includes a traveler **48**. The traveler **48** is configured to slide over the guidepost **26**. In the illustrated embodiment, the traveler **48** has a corresponding tubular shape and is sized to slip over the guidepost **26**. In this manner, the traveler **48** can be moved vertically over the guidepost **26**.

A knob **50** is fit onto the traveler **48**. The knob controls a dowel (not shown) that selectively engages one of the locking holes formed in the front side of the guidepost **26**. In this manner, the user can releasably select the vertical position of the traveler **48**.

The traveler **48** supports a handle pulley assembly **52** of the cable guide mechanism **46** via a hinge connection **54**. The hinge connection **54** allows the handle pulley assembly **52** to

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rotate about a vertical axis. The handle pulley assembly **52** comprises a pair of pulleys **56**, **58** that are arranged one above the other with the lower one **58** positioned slightly forward of the upper one **56**. In the illustrated embodiment, the offset between the upper and lower pulleys **56**, **58** is less than the diameter of either pulley. The pulleys **56**, **58** preferably have the same diameter; however, pulleys of different size diameters can also be used. The pulley assembly **52** includes a plurality of holes, as best seen in FIG. 3A, formed in its side brackets. The holes lighten the weight of the pulley assembly **52** in order to respond more quickly to the movement of the user and to do so with less resistance.

A first end **60** of a cable **62** (a "user cable") of the extension mechanism **14** is threaded between the pulleys **56**, **58** of the handle pulley assembly **52**. The handle **12** is connected to this first end **60** of the user cable **62**. The handle **12** preferably is releasably connected to the end of the user cable **62** in order to exchange different types of user interface. The arrangement of the hinge connection **54** and handle pulley assembly **52** automatically aligns the user cable **62** with the handle pulley assembly **52** when the handle **12** is pulled from substantially any direction outwardly from the unit **10**.

A second end **64** of the user cable **62** is connected to the traveler **48** and extends downwardly from the traveler **48** to a bottom pulley set **66** (see FIG. 3). The bottom pulley set **66** directs the user cable **62** to the rear and inside of the unit housing **20**. With reference FIG. 4, from the bottom pulley set **66**, the user cable **62** extends upwardly in the housing **20** to a series of pulleys that, in the illustrated embodiment, collectively comprise a block-and-tackle mechanism **68** of the extension mechanism **14**. The user cable **62** is wound through the pulley blocks and is then directed upwardly to an upper pulley set **70**, which directs the user cable **62** to the front side **28** of the housing **20** and downward to the handle pulley assembly **52**. The user cable **62** terminates at its first end **60**, which, as noted above, is connected to the handle **12**. Since the user cable **62** is threaded through the block-and-tackle mechanism **68** and back to the traveler **48**, the handle pulley assembly **52** can be moved vertically along the guidepost **26** without loosening the user cable **26** or affecting the block-and-tackle mechanism **68**, as described in more detail below.

As used herein, "cable," means collectively, steel or fiber rope, cord, or the like. For example, the user cable **62** can be a formed of a synthetic material, such as a polymer. One suitable example for the user cable **62** is a polyester/nylon blend rope; however, a coated steel cable can also be used. For example, the user cable **62** can comprises 1/8-inch wire cable with a plastic sheathing, and most of the pulleys of the unit that support the cable can have a diameter of about five inches. Although any suitable cable and pulley size can be employed, it is preferable that the associated pulleys have a diameter about 40 times the diameter of the coated-wire cable. Smaller diameter pulleys, however, can be used with other types of cables, e.g., 3.5-inch diameter pulleys used with polyester/nylon blend rope.

As best seen in FIGS. 2 and 4, the block-and-tackle mechanism **68** includes an upper pulley block **72** and a lower pulley block **74**. Each pulley block **72**, **74**, in the illustrated embodiment, includes two pulleys; however, each block **72**, **74** can include fewer or more pulleys. The upper pulley block **72** is attached to upper cross member **30** or bracket **34** of the frame **22**. The user cable **62** extends upward inside the housing **20** from the bottom pulley set **66** and wraps around one of the pulleys of the upper pulley block **72**. The cable **62** then extends down and wraps around one of the pulleys of the lower pulley block **74**, and then up and down again wrapping around the second pulleys of the upper and lower pulley

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blocks **72**, **74**, respectively. From the lower pulley block **74**, the user cable **62** extends upward to the upper pulley set **70**, as described above. Accordingly, as the user pulls the user cable **62** from the unit **10** (i.e., pulls the cable **62** toward the extended position), the block-and-tackle shortens in the process as the lower pulley block **74** moves upward toward the upper pulley block **72**.

The lower pulley **74** remains generally stationary if the traveler **48** is moved without pulling on the handle **14**. Both ends of the user cable **62** also move with the traveler **48**. Accordingly, upward movement of the traveler **48** pulls up on the lower section of the user cable **62**, which consequently pulls into the block-and-tackle mechanism **68** from the top any would-be slack in the upper section of the user cable **62**.

As best seen in FIGS. **4** and **4A**, the lower pulley block **74** constitutes an output member of the block-and-tackle mechanism **68** in the illustrated embodiment. In other words, the load to be “lifted” is connected to lower pulley block **74** in the illustrated embodiment.

The coupling mechanism **18** in the illustrated embodiment includes a main cable **76**. A first end **78** of the main cable **76** is attached to the lower pulley block **74**. The second end **80** of the main cable **76** is fixed to the housing **20**. The main cable **76** cooperates with the resistance assembly **16** (see FIG. **4A**). As the user pulls the handle **12**, the user cable **62** winds through the pulley blocks **72**, **74**, lifting the lower pulley block **74** and correspondingly pulling on the main cable **76**. Force from the resistance assembly **16** is communicated through the main cable **76** to the lower pulley block **74** and further to the user cable **62**.

In the illustrated embodiment, the block-and-tackle mechanism **68** is arranged with four pulleys and four lengths of line between the pulleys. As such, the resultant force at the handle **12** is one-fourth of the force supplied by the resistance assembly **16**, and the stroke length of handle **12** is about four times the stroke length of the pulley block output (i.e., the distance of between upper and lower pulley blocks **72**, **74** when the handle **12** is in the retracted position). Of course, any pulley assembly can be used to achieve any desired force reduction or stroke elongation.

The resistance assembly **16** of the illustrated embodiment (i.e., illustrated in FIGS. **4** and **4A**) includes a pneumatic actuator **82**. In the illustrated embodiment, the pneumatic actuator **82** is a linear actuator that includes a cylinder **84** and a piston rod **86**. The cylinder **84** includes a cylinder body and a piston that slides within the cylinder body. The piston divides the cylinder body into two variably volume chambers. At least one of the chambers only selectively communicates with the atmosphere so as to provide the desired resistance. The other chamber can be open to the atmosphere; however, in some applications, both chambers can be pressurized (e.g., be of equal pressure), can selectively communicate with the atmosphere and/or can communicate with each other. In the illustrated embodiment, however, one of the chambers communicates with the atmosphere (e.g., the air within the housing) so as not to resist movement of the piston.

The piston rod **86** is connected to the piston and extends through one of the variable volume chambers. The piston rod **86** moves linearly along a stroke axis as the piston slides within the cylinder bore. The stroke length of the piston rod **86** is sufficient to provide the desired stroke for the block-and-tackle mechanism **68** (as discussed above).

A cap closes the opposite end of the cylinder body (i.e., opposite of the end through which the piston rod extends). The cap includes a lug. A pivot pin **88** preferably secures the lug to the cylinder-mounting bar **40** such that the pneumatic actuator **82** can pivot within the housing **20** about the pivot pin

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88. The pneumatic actuator **82** in the illustrated embodiment hangs from the bar **40** within the housing **20** so as to pivot within a plane that is generally parallel to the front side **28** of the housing **20**; however, in some applications, the cylinder body can be rigidly fixed within the housing **20**. The actuator **82** in this position thus has an upper chamber and a lower chamber. In the illustrated embodiment, the lower chamber is open to the atmosphere (preferably through a filter) and the upper chamber is pressurized.

At least several components of the pneumatic cylinder are preferably formed of a polymer (e.g., plastic) in order to lighten the weight of the resistance unit **10** and to decrease production costs. Such components can include the cylinder body, the piston and one or more of the end caps of the cylinder.

The upper chamber preferably communicates with at least one accumulator **90**, as seen in FIG. **4**. The accumulator **90** is preferably rigidly mounted within the housing **20** at a location next to the cylinder **84**. In the illustrated embodiment, the accumulator **90** is mounted on one side of the cylinder **84** and the block-and-tackle mechanism **68** is disposed on the other side of the cylinder **84** within the housing **20**. An air equalization line **92** connects the accumulator with the cylinder **84** so as to expand effectively the variable volume of the upper chamber. In this manner, the effective air volume of the cylinder is increased, and air pressure thus will not increase as dramatically when the piston is moved.

The accumulator **90** and the upper chamber also selectively communicate with a source of pressurized air and with the atmosphere. In the illustrated example, an air compressor, which can be remotely disposed relative to the exercise apparatus, communicates with the upper chamber through an inlet valve. A button **94** that actuates the inlet valve preferably is accessible from the front side **28** of the housing **20** (as seen in FIG. **1**) and is marked with appropriate indicia (e.g., “+”). Pushing the button **94** adds air pressure to the charged side of the cylinder **84**, e.g., the upper chamber in the illustrated embodiment. An outlet valve communicates with the charged side of the cylinder to selectively expel air to the atmosphere in order to decrease air pressure on the charged side of the cylinder **84**. A button **96** that actuates the outlet valve also is preferably accessible from the front side **28** of housing **20** and is marked with appropriate indicia (e.g., “-”). A user thus can adjust, i.e., increase or decrease, the air pressure within the resistance assembly **16** by operating the appropriate valves.

The coupling mechanism **18** transfers a resistant force from the resistance assembly **16** to the extension mechanism **14** to oppose movement of the handle **12** by the user. As noted above, the coupling mechanism **18** includes the main cable **76** that is pivotally fixed at its first end **78** to the lower pulley block **74** and is rigidly fixed at its second end **80** to the housing **20**. For this purpose, the main cable **76**, in the illustrated embodiment, includes a ball swaged onto the first end **78**. The ball fits through a keyway slot formed in the lower pulley block **74** and nests in a receptacle (not shown). The receptacle/ball connection secures the first end **78** of the main cable **76** to the lower pulley block **74**, yet allows the cable **76** to pivot relative to the pulley block **74**.

The coupling mechanism **18** also includes a main pulley or pulley wheel **98** that preferably is circular and has a larger diameter than the pulleys of the block-and-tackle mechanism **68**. The main pulley **98** is rotatably attached to the end of the piston rod **86** to permit rotation of the main pulley **98** relative to the piston rod **86**. For this purpose, the main pulley **98** includes a bearing **100** to which a bolt or pivot shaft couples

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to the piston rod end. A cable channel is disposed about the periphery of the main pulley 98, and the main cable 76 fits therein.

With reference to FIG. 4A, a cable lock notch 102 is disposed along the peripheral edge of the main pulley 98. In the illustrated embodiment, the cable lock notch 102 is disposed at the point that will provide a sufficient amount of the main cable 76 to unwind from the main pulley 76 to accommodate the stroke length of the piston rod 86. A cable lock member 104 is disposed about the main cable 76, and fits into the cable lock notch 102. In this manner, the position of the main cable 76 relative to the main pulley 98 is maintained.

A guide preferably is provided next to the pulley wheel and is arranged such that the pulley wheel rides along the guide. In the illustrated embodiment, the guide is an elongate cable support member 106 that extends inwardly from a first side of the housing 20, which is farthest from the extension mechanism (e.g., the left side, as viewed from the front, in the illustrated embodiment). The guide, however, need not in all applications support the cable 76 or hold the cable 76 within the peripheral channel of the main pulley 98.

The cable support member 106 is positioned immediately adjacent the downwardly extending portion of the main cable 76 adjacent the first side of the housing 20. The cable support member 106 preferably has a thickness that is about equal to the diameter of the cable 76, and is thin enough to fit at least partially within the peripheral channel of the main pulley 98. As the main pulley 98 is drawn upwardly, it rolls on the cable 76 and the support member 106. The support member 106 thus prevents any substantially "play" in the coupling mechanism 18 that would otherwise occur and, in fact, helps hold the main pulley 98 securely in place during operation of the device. Since the cable 76 generally does not slide relative to the cable support member 106, wear of the cable 76 and the pulley 98 is substantially lessened.

With continued reference to FIGS. 4 and 4A, a cable cover 108 preferably extends from a second side of the housing 20 (e.g., the right side, as viewed from the front, in the illustrated embodiment). The cable cover 108 shields the main cable 76. Also, the peripheral edge of the main pulley 98 preferably fits within the cover 108 so that the cover 108 can help keep the main pulley 98 properly aligned. Preferably, however, the cable cover 108 does not contact or support the main pulley 98 or the main cable 76.

As understood from FIG. 4, a first section of the main cable 76 extends from the main pulley 98 toward the first cable end 78 and a second section of the main cable 76 extends from the main pulley 98 toward the second cable end 80. In the illustrated embodiment, each of the first and second cable sections has a generally vertical orientation. The pneumatic actuator 82 is arranged such that its stroke axis lies generally parallel to the first section of the main cable 76 at least initially when the handle 12 is in its retracted position.

The above configuration of the extension mechanism 14, the resistance assembly 16 and the coupling mechanism 18 provides for a compact resistance unit 10. The resistance unit 10 can be readily used in a variety of applications, as made clear from the additional embodiments. It is also lightweight and involves relative few components, yet provides a full range of movement, versatility in the types of exercises that can be performed, and variability in the amount of resistance provided.

As discussed above, it can be expected that, as the piston moves within the cylinder 84, the resistance force will increase somewhat, although not as dramatic as it would without the accumulator. For some exercises, it is preferred that the resistance force be maintained at a generally constant

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level throughout the exercise stroke (e.g., the cable tension remains generally constant). As discussed below, the illustrated embodiment comprises a mechanism for controlling the resistance force over the stroke of the piston rod 86; however, the resistance unit 10 need not include such a mechanism in all applications.

To produce a more constant resistance force over the stroke length of the piston rod 86, the bearing 100 is offset from the center of the main pulley 98. The offset position causes the block-and-tackle mechanism 68 to gain additional leverage over the cylinder as the main pulley 98 rotates. As the piston is forced into the cylinder 84, the main pulley 98 rotates, thereby moving the bearing 100 away from the side of the main cable 76 that is connected to the block-and-tackle mechanism 68. The main pulley 98 thus acts as a simple beam with a movable fulcrum. The increase distance between the point where the block-and-tackle mechanism 68 pulls on the main pulley 98 and the point at which the pneumatic actuator 82 acts on the main pulley 98 (e.g., the bearing 100) causes the block-and-tackle mechanism 68 to increase leverage over the resistance assembly 16. Additionally, the offset position causes the pneumatic actuator 82 to pivot and produce a force vector that is skewed relative to the direction in which the main pulley 98 is being drawn. Accordingly, only a portion of the resistance force opposes the movement of the main pulley 98 toward the cylinder 84; the other force component forces the main pulley 98 toward a side of the housing 20. Consequently, the overall the effective resistance force remains generally constant throughout the entire stroke of the piston rod 86.

In the illustrated embodiment, the cylinder 84 is generally vertically oriented when the stroke begins, but pivots toward the first side of the housing as the stroke progresses. For this purpose, the bearing 100 is located such that a line L that passes through the center of the main pulley 98 and the bearing 100 lies generally normal to the stroke axis of the piston rod 86. In the illustrated embodiment, the line L extends horizontally. In other embodiments, the position of the cylinder 84 at the start and throughout the stroke can be varied. The cylinder, however, preferably does not cause the main pulley 98 to pull away from the cable support member 106.

A similar effect can be achieved by changing the profile of the guide (e.g., the cable support member 106) or the shape of the main pulley 98 such that the pneumatic actuator 82 pivots as main pulley 98 moves toward the cylinder 84. The result again is that the block-and-tackle mechanism 68 gains leverage and that only a portion of the resistance force opposes the movement. It also is understood that this effect can be achieved with gears and like mechanism in the place of the main pulley and main cable.

Rather than maintain a constant force, these techniques can also be used either alone or together to produce resistance force curves that increase and decrease throughout the exercise stroke. For example, when exercising the quadriceps muscle in the leg, the resistance force desirably increase toward the middle of the stroke and then decreases at the end. The initial orientation of the pneumatic actuator, the degree of offset of the bearing (if any), the initial position of the bearing, the shape of the main pulley, and/or the profile of the guide can be used to produce the desired force curve.

As seen in FIG. 4, the cable support member 106 preferably extends in a direction that is generally parallel to a plane that is perpendicular to the face of the main pulley 98 and that passes through a center point of the main pulley 98. The cable support member 106 is disposed on one side of the plane and the point of attachment (e.g., the pivot pin 88) of the pneu-

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matic actuator **82** to the frame **22** is located on the other side of the plane. Additionally, the bearing **100** is on the same side of the plane as the point of attachment of the pneumatic cylinder **82** to the frame **22** at least when the handle **12** is in its retracted position. As also understood from the illustrated embodiment, as best seen in FIG. **4**, the stroke axis of the piston rod **86** extends in a direction generally parallel to the plane.

In the illustrated embodiment, the stroke of the pneumatic cylinder piston rod **86** is about 12 inches, and the main pulley **98** has a diameter of about 8 inches. Over the full stroke of the piston **86**, about 12 inches of cable **76** unwinds from the main pulley **98**. Thus, with each piston stroke, the lower pulley block **74** moves about 24 inches, or about 2 feet. Since the block-and-tackle mechanism **68** is configured to increase the stroke length by 4 times, a total cable stroke at the handle **12** is about 8 feet. In this manner, a compact, light and reliable resistance unit **10** provides 8 feet of cable travel.

Additionally, the main pulley **98** is substantially circular, has a diameter of about 8 inches, and the bearing/connection point of the main pulley is disposed $\frac{7}{8}$ of an inch off-center. As discussed above, this configuration of the main pulley **98**, combined with the illustrated configuration of the pneumatic resistance assembly **16**, provides a generally constant exercise force (e.g., $\pm 10\%$) throughout the piston rod stroke. It is to be understood that the above dimensions apply only to the illustrated embodiment, are by way of example only and are not intended to limit the invention, and the principles discussed above can be employed to create any type of exercise apparatus having any desired stroke length and resistance curves.

It also is to be understood that in other embodiments it may be desired to have a changing force curve over the exercise stroke. Any number of parameters discussed above can be adjusted to custom-tailor such a changing force curve. For example, the offset of the connection bearing can be varied and/or an ellipsoid, irregular or other non-circular main pulley shape can be employed. Also, in the illustrated embodiment, the main pulley rotated through a range of angles from about 0° to about 170° . Variable resistance forces can also be achieved by beginning rotation at a different angle such as, for example, 5° , -5° , 90° , etc., relative to the horizontal.

The operation of the illustrated resistance unit will be described in connection with FIGS. **4A**, **4B** and **4C**. As shown in FIG. **4A**, when the resistance assembly **16** is in an unloaded position and/or when the handle **12** is in the retracted position, the generally horizontal line **L** intersects the bearing **100** and the center of the main pulley **98**. This position of the main pulley **98** is considered to be 0° relative to horizontal. The piston rod **86** is preferably substantially vertically oriented in this unloaded position. As the user pulls the handle **12** so that the lower pulley block **74** moves upwardly, the main cable **76** is also drawn upwardly, thus vertically translating the main pulley **98** and also causing the main pulley **98** to rotate. In the illustrated embodiment, the bearing **100** rotates from about 0° through about 170° during the stroke of the piston rod **86**.

The offset connection of the piston rod **86** to the main pulley **98** causes the pneumatic cylinder to pivot about the pivot point **88** when the main pulley rotates **98**. As such, the cylinder **84** is directed at least partially toward a first side of the housing **20**. As discussed above, the pneumatic actuator **82** exerts a substantial force during compression of the cylinder. The vertical component of the force is translated along the longitudinal length of the main cable **76**. However, the horizontal component of the force tends to urge the main pulley **86** toward the first side of the housing and against the support member. Accordingly, although the force exerted by

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the pneumatic actuator **82** increases, not all of the force is directly opposing the upward movement of the main pulley **98**. Moreover, the movement of the bearing **100** away from the block-and-tackle mechanism **68** increases the leverage that the block-and-tackle mechanism **68** has over the pneumatic actuator **82**.

FIG. **4B** illustrates the position and orientation of the piston rod **86** and the main pulley **98** at a point about halfway through the piston rod stroke. The main pulley **98** has rotated through about 90° such that the bearing **100** is located almost above the center of the main pulley **98**. The main pulley **98** also has rolled along the cable support member **106** and is closer to the cylinder **84**. Because of the position of the bearing **100**, the cylinder **84** has pivoted with the rotation of the main pulley **98**. Accordingly, the stroke axis of the piston rod **86** is no longer vertically oriented and is skewed relative to the first and second sections of the main cable **76**. Additionally, the distance between the bearing **100** and the section of the main cable **76** attached to the lower pulley block **74** has also increased to provide the block-and-tackle mechanism **68** with additional leverage over the pneumatic cylinder **82**.

FIG. **4C** illustrates the position and orientation of the piston rod **86** and the main pulley **98** at a point near the end of the piston rod stroke. The main pulley **98** has rotated through about 170° such that the bearing **100** is located almost opposite of where it started. The main pulley **98** also has rolled along the cable support member **106** and lies near the lower end of the cylinder **84**. Because of the position of the bearing **100**, the cylinder **84** has pivoted further with the rotation of the main pulley **98** and the stroke axis of the piston rod **86** is even more skewed relative to the first and second sections of the main cable **76**. Additionally, the distance between the bearing **100** and the section of the main cable **76** attached to the lower pulley block **74** has also increased to provide further leverage of the block-and-tackle mechanism over the pneumatic cylinder **82**.

Accordingly, as the main pulley **98** rotates, the load exerted by the pneumatic cylinder on the pulley block shifts away from the pulley system (e.g., the block-and-tackle mechanism **68**) as a result of its offset connection to the pulley **98**, and the pulley system's leverage thereby increases. As such, the resistance force exerted by the resistance assembly **16** on the handle **12** is generally constant throughout the exercise stroke.

Exercise System

In accordance with another aspect of the exercise apparatus, there is provided an exercise system **200** in which the resistance unit **10** can be moved so as to vary its versatility. The system **200** preferably includes at least one resistance unit similar to that described above; however, various aspects, features and advantages of the system **200** can be used with other types of resistance mechanisms including, for example, but without limitation, weight stacks, hydraulics, elastic members or the like. Additionally, the illustrated exercise system **200** includes two resistance units, but one unit or more units can also be used.

With reference to FIGS. **5-8**, an exercise system **200** comprises a rigid station frame **202** supporting a seat assembly **204** and two resistance units **206**. The frame can also support other exercise equipment that can be used alone or with the resistance units **206**. For example, FIG. **5** illustrates a brace **208** that a user can hold when using the adjacent resistance unit **206**.

In the illustrated embodiment, the station frame **202** is constructed of rigid square steel tubing. Of course, any suitable material can be used for the frame **202**. The frame **202** has a generally U-shape as viewed from the top (see FIG. **7**)

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and includes a back section **210**, a first side section **212** and a second side section **214**. An upper cross member **215** links the first and second side sections **212**, **214** together in order to strengthen the station frame **202**. In the illustrated embodiment, each side section includes a three portions: a first portion **216** that lies generally within the same plane as the back section **210**, a second portion **218** that lies generally normal to the first portion **216**, and a third portion **220** that extends between and lies oblique to the first and second portions **216**, **218**. An exercise area or zone **222** is defined within the first and second side sections **212**, **214** and the back section **210**.

As best seen in FIGS. 5 and 6, the seating assembly **204** is arranged generally centrally within the frame **202**. The two resistance units **206** are provided on generally opposite sides of the seat assembly **204**.

Each of the resistance units **206** includes an extension mechanism **14** that provides a range of movement to the user interface **12**, a resistance assembly **16** that resists movements of the user interface **12**, a coupling mechanism **18** that couples the resistance assembly **16** to the extension mechanism **14**, and a housing **224**. The housing **224** supports these components and preferably encloses the resistance assembly **16**, the coupling mechanism **18**, and at least a portion of the extension mechanism **14**. These mechanisms and assembly **14**, **16**, **18** preferably are configured and arranged in accordance with the above description of the resistance unit **10**. The housing **224** is similar to the housing **20** of the embodiment described above; however, the housing **224** preferably has a support mechanism **226** that permits the housing **208** to move relative to the frame **202** and to be selectively locked in a position on the frame **202**. The support mechanism **226** will be described below.

The user interface **12** (e.g., a handle), in each of the resistance units **206**, is connected to a corresponding user cable **62**, as described above. The cable **62** is operatively connected to the resistance assembly **16** of the resistance unit **206** in the same manner as described above. As the user pulls upon the handle **12** with a force, the resistance assembly **16** applies an oppositely directed resistance force.

In operation, the user sits or stands generally centrally in an exercise area **222** defined within the frame and grasps the handles **12** of the opposing resistance units **206**. As the user pulls on the handles, the resistance units **206** resist the user's efforts with a resistance force, thus providing fitness training for the user. Alternatively, the user can use just one of the resistance units.

The user can adjust the configuration and positioning of the seat assembly **204** and the resistance units **206**. This adjustability enables the user to perform a variety of exercises that will exercise a variety of muscle groups.

In particular, the resistance units **206** can be moved relative to the frame **202** and relative to the seat assembly **204**. For this purpose, as best seen in FIGS. 5 and 7, at least one arcuate track **228** is connected to the frame **202**. In the illustrated embodiment, pairs of arcuate tracks **228** are connected at the top and the bottom of the frame **202**, and more particularly to the portions **216**, **218**, **220** of each side section **212**, **214**. The track pairs **228** are on opposite sides of the seat assembly **214**.

For each resistance unit **206**, a lower roller assembly **230** of the support mechanism **226**, which includes a pair of lower track wheels (see FIGS. 6 and 8), is mounted onto the resistance unit housing **224** and engages the lower track **228** so as to roll along the track **228**. Similarly, an upper roller assembly **232** that includes a pair of upper track wheels (see FIGS. 6 and 8) is mounted onto the resistance unit housing **224** and engages the upper track **228** to roll along the track **228**. In this

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manner, each resistance unit **206** is held securely to the frame **202**, but is movable along the tracks **228**.

As best seen in FIG. 5, a plurality of preset holes **234** is formed through each track **228**. A lock rod of each resistance unit **206** is configured to be selectively engageable with the holes **234** so as to fix releasably the resistance unit **206** in a specific desired position along the track **228**. A lock rod support is mounted on the housing **224**, and the lock rod extends therethrough. An armature connects the lock rod to a rotating control rod. The control rod connects the upper lock rod with a lower lock rod. Each lock rod is configured to engage the holes **234** in the corresponding track **228**. The armature and rotating control rod are configured so that when the control rod rotates, the lock rods are moved into or out of the corresponding holes **234**.

The control rod extends through the housing **224**. Rotation of the control rod is accomplished by manipulating a knob **236** (see FIG. 5) on the front of the housing **224**. The knob **236** actuates an actuator, which extends into the housing to rotate the control rod. In this manner, a user can release the lock rods from and engage the lock rods with the corresponding holes **234** so as to move and lock the corresponding resistance unit **206** in a desired position along the tracks **228**. However, various other locking mechanisms can be used to releasably secure the resistance units **206** in desired positions. For example, a friction brake, spring and ball detent, or the like can be used.

In the illustrated embodiment, both of the arcuate tracks **228** have a radius of approximately 33 inches and extend along an arcuate range of more than 90° and less than 180° (e.g., 120°). It is to be understood, however, that tracks of various sizes and configurations can also be used. For example, the track can be substantially straight or can have an irregular configuration. Additionally, the illustrated embodiment employs an upper track and a lower track. Additional embodiments can employ different configurations such as, for example, only an upper track, a single track about the midsection of the frame, three or more tracks, etc.

Still further embodiments can employ quite different mechanisms for moving the resistance unit(s) **206**. For example, a rack and pinion or electromagnetic support structure can be configured to allow adjustability of the resistance unit(s). Any suitable member or system that allows the resistance unit(s) **206** to be easily wheeled, slid, or otherwise translated along a predefined track can advantageously be employed.

Additionally, movement of the units **206** can be controlled by hand or can be automated. For example, an electric motor can be employed to move the resistance unit(s) as desired and to hold the units in place. In an additional embodiment, a motor can be configured to move the resistance unit(s) during an exercise routine so that the user can simultaneously exercise a range of muscles.

As seen in FIGS. 6-8, the seat assembly **204** comprises a seat back portion **238** and a seat bottom portion **240**. The bottom portion **240** preferably is angled about 0-20° and more preferably about 10° relative to horizontal and includes a pedestal **242** preferably comprising three wheeled leg members. The back portion **238** and the bottom portion **240** are connected to each other through a linkage so that the bottom portion **240** can moved (e.g., rolled) between a plurality of seat positions, and the angle between the back **238** and bottom portion **240** will change with differing seat positions.

A tubular vertical track, or guidepost **244**, is mounted on the exercise apparatus frame **202**, and more particularly to the back frame section **210**, and a traveler **246** is configured to slide along the guidepost **244**. The seat back portion **238** and

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linkage **248** of the seat assembly **204** are connected to the traveler **246**. As the traveler **246** is moved, the position and arrangement of the seat assembly **204** changes. For example, the seat assembly **204** can be positioned out of the way of the exercise area **222** so that a user can use the exercise system **202** while standing. The traveler **246** can be lowered to move the seat assembly **204** into the exercise area **222** so that a user can sit on the seat assembly **204** in a partially reclined attitude while exercising. Finally, the seat assembly **204** can be essentially flattened out so that the user can lie on the seat assembly **204** while using the exercise system **200**.

In the illustrated embodiment, as best seen in FIG. 6, the guidepost **244** has a number of locking holes **250** formed therethrough that define a plurality of discrete positions for seat back portion **238** on the frame **202**. A knob **252** and locking dowel (not shown) are supported on the traveler **246**, and the dowel selectively engages the locking holes **250** to releasably secure the seat assembly **204** in a variety of preset positions. For example, preset seat positions may position the seat back **238** at an angle relative to horizontal of about 0° (lying down), 30°, 45°, 60°, 75° and 90° (when the seat is positioned out of the exercise area). In another embodiment, a rubber stopper is used to prevent the seat back **238** from extending beyond about 0°. Of course, any of a multitude of mechanisms can be employed to hold the seat in a variety of positions.

With more specific reference to FIGS. 5 and 8, a counterweight system **254** can be provided to assist the user while adjusting the seat position. (This system is not illustrated in FIGS. 6 and 7 in order to simplify these drawings.) The counterweight system **254** comprises a counterweight cable **256** (FIG. 8) attached to the seat assembly traveler **246**. The counterweight cable **256** extends upwardly and is wound about a counterweight pulley **258** positioned atop the frame back section **210**. The counterweight cable **256** is directed by the pulley **258** into the tubular vertical track **244**, within which a counterweight rides.

Multi-Function Exercise Station

With reference to FIGS. 9-12, the resistance unit described above can be a floor unit, either mounted directly to the floor or to a support stand. The construction of the present resistance unit **300** is similar to that described above except for the construction of the extension mechanism and the cable guide mechanism.

In this embodiment, as best seen in FIG. 11, the upper pulley block **302** includes one fewer pulleys than the lower pulley block **304**. In this manner, both ends of the user cable **306** extend upward as they exit the block-and-tackle mechanism **308**. Upper pulleys **310** are disposed to either side of the extension mechanism **14** so as to guide the ends of the user cable **306** out of respective upper openings in a housing **312**. This design allows for either end of the user cable **306** to be pulled (e.g., either handle **12** to be pulled) or for both cable ends to be pulled simultaneously or in a sequence.

The housing **312** houses a resistance assembly **16** and a coupling mechanism **18**. The construction and layout of the resistance assembly **16** and the coupling mechanism **18** are the same as that described above in connection with the first embodiment.

The housing **312** also supports a pair of adjustable arms **314**. The arms **314** are disposed on opposite sides of the housing **312** and extend outward from the housing **312**. In the illustrated embodiment, each arm **314** extends at a 30° angle relative to the front side **28** of the housing and thus lie 120° apart from each other. This arrangement is advantageous because it permits three units **300** to be mounted close to each other in a triangular arrangement. That is, each unit **300** is

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arranged along one leg of an equilateral triangle with the rear side of the units **300** facing one another. Because the arms **314** of each unit **300** are spaced apart by 120°, the movement of the arm **314** of one unit **300** does not interfere with the movement of an adjacent arm **314** of the next unit **300**.

Each arm **314** has a tubular structure through which the user cable **306** passes. The outer end of the arm supports a handle pulley assembly **316** via a hinge connection. The hinge connection allows the handle pulley assembly **316** to rotate about an axis of the arm **314**. The handle pulley assembly **316** comprises a pulley that is offset to one side of the arm axis. As with the above-described pulley assembly, the present pulley assembly **316** includes a plurality of holes, as best seen in FIG. 9, formed in its side brackets. The holes lighten the weight of the assembly **316** in order to respond more quickly to the movement of the user and to do so with less resistance.

The first end of the user cable **306** is threaded over the pulley of the handle pulley assembly **316** and one of the handles **12** is connected to this first end of the user cable. In the illustrated embodiment, the handle **12** preferably is releasably connected to the end of the user cable **306** in order to exchange different types of user interface. The arrangement of the hinge connection and handle pulley assembly **316** automatically aligns the user cable **306** with the handle pulley assembly **316** when the handle **12** is pulled from substantially any direction outwardly from the arm **314**. The second end of the user cable **306** is similarly arranged and is similarly connected to the other handle **12**.

As best seen in FIGS. 10 and 10A, a hinge assembly **318** hinges the opposite end of each arm **314** to the housing **312**. Each hinge assembly **318** provides about 180° of movement (slightly less in the illustrated embodiment) in order to vary the vertical position of the corresponding handle pulley assembly **316**. For example, in order to do biceps curls, the arms **314** would be positioned to extend straight down and the user would pull the handles **12** upward from the pulley assemblies **316**. In order to do lateral-pull-downs or triceps pushes, the arms **314** would be positioned to extend straight up and the user would pull down on the handles **12**. The arms **314** preferably can be selectively locked in a number of positions between these two extremes.

For this purpose, each hinge assembly **318** includes a locking mechanism. In the illustrated embodiment, each hinge assembly includes a bracket **320** that receives a lug **321**. The bracket **320** is formed by at least two bracket plates: a front bracket plate **322** and a back bracket plate **324**. The bracket **320** is disposed on (and preferably at least partially integrated with) the housing **312** and the lug **321** is disposed on the inner end of the arm **314**. At least one of the bracket plates **322**, **324** includes a plurality of locking holes **325** that are spaced in an arcuate pattern along an outer edge of the bracket plate. The lug **321** supports a knob **326** that controls a dowel (not shown). The dowel selectively engages one of the locking holes **325**. In this manner, the user can releasably select the vertical position of the arm **314**. In the illustrated embodiment, the knob **326** is supported on the front side of the front bracket plate **322** by a support bracket **328** on the lug **321**. The user pulls out the knob **326** to disengage the dowel from a locking hole **325** and releases (if a spring bias is provided) or pushes the knob **326** to engage the dowel with the locking hole **325**.

Each hinge assembly **318** includes an inner pulley **330** over which the user cable **306** runs from the corresponding upper pulley **310** into the arm **314**. In the illustrated embodiment, the position of the pulley **330** within the hinge assembly **318** is disposed at a position below the corresponding upper pul-

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ley 310 in the housing 312. Thus, the user cable 306 extends over the upper pulley 310 and under the hinge assembly pulley 330 when the arm 314 is at least in an upward extending orientation.

Each hinge assembly 318 does not include an axle in order to accommodate the full range of movement of the arm 314 and to not pinch the user cable 306 during such movement. The hinge assemblies 318 also are zero-clearance (i.e., have no slop) in order that the user to does not sense any "play" in the structure as he or she pulls on the handles 12. For this purpose, as best seen in FIGS. 11 and 12, the front bracket plate 322 is connected to the housing 312. The rear bracket plate 324 is connected to the front bracket plate 322 by fasteners 332. Each bracket plate 322, 324 includes a hole 334 (the hole 334 in the front bracket 322 is covered by a shroud as seen in FIG. 10A), and the holes 334 are aligned when assembled. The lug 321 includes two corresponding semi-spherical dimples 335 that are arranged on opposite sides of the lug 321. As best seen in FIG. 12, a ball bearing 336 is disposed between each hole 334 and the corresponding dimple 335 such that the ball bearing 336 is captured between the corresponding bracket plate 322, 324 and the lug 321. Each ball bearing 336 has a diameter larger than the hole 334 and is sized to partially nest within the respective dimple 335. The ball bearings 336 together act as the pivot about which the arm 314 rotates. By tightening the fasteners 332 and thereby drawing the bracket plates 322, 324 together, play or looseness between the lug 321 and bracket 320 can be substantially eliminated.

Variations

With reference next to FIG. 13, another embodiment of a pneumatic resistance assembly allows easy adjustment of the force characteristics of the device. As discussed above, in many embodiments, it is desired to have a generally constant resistance force over an exercise stroke. However, in some instances it is desirable to be able to quickly change to a force that increases over the stroke.

The resistance assembly 400 illustrated in FIG. 13 is similar to the embodiment of the resistance assembly 16 discussed above with reference to FIGS. 1-4, except that a second accumulator 402 is operatively connected to the first accumulator 404 via an air line 406, and each of the accumulators 402, 404 is about half the size of the accumulator 90 illustrated in FIG. 4. During a first mode of operation, the first and second accumulators 402, 404 collectively function the same as the accumulator 90 of FIG. 4. However, if a user desires to change the force characteristics, the user can simply actuate a valve 408 in order to isolate the second accumulator 402. The effective size of the air reservoir is lessened, and the force will increase over the exercise stroke.

As seen in FIG. 13, the resistance assembly 400 can also communicate with a source of air pressure 410 (e.g., a compressor) through an air inlet valve 412. The assembly preferably includes a gauge 414 (e.g., an air pressure gauge) to indicate the amount of resistance provided by the pneumatic actuator 82. A bleed off valve 416 also communicates with the cylinder 84 and at least the first accumulator 404 to reduce the resistance force provided by the pneumatic cylinder 82.

In additional embodiments, a pneumatic resistance system can comprise three or more accumulators of a plurality of sizes connected by one or more air lines and can be selectively isolated from one another by user-actuated valves. Additionally, a valve can be interposed between the cylinder and the accumulator(s).

Although this invention has been disclosed in the context of certain preferred embodiments and examples, it will be understood by those skilled in the art that the present inven-

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tion extends beyond the specifically disclosed embodiments to other alternative embodiments and/or uses of the invention and apparent modifications and equivalents thereof. For example, while the illustrated embodiments have employed the resistance unit in an upright position, the unit can be oriented differently (e.g., be laid horizontally or inclined) in many applications. In addition, while a number of variations of the invention have been shown and described in detail, other modifications, which are within the scope of this invention, will be readily apparent to those of skill in the art based upon this disclosure. It is also contemplated that various combinations or sub-combinations of the specific features and aspects of the embodiments may be made and still fall within the scope of the invention. Accordingly, it should be understood that various features and aspects of the disclosed embodiments can be combined with or substituted for one another in order to form varying modes of the disclosed invention. Thus, it is intended that the scope of the present invention herein disclosed should not be limited by the particular disclosed embodiments described above, but should be determined only by a fair reading of the claims that follow.

What is claimed is:

1. An exercise station comprising:

a housing including a pneumatic resistance assembly;

a pair of adjustable arms supported by the housing, the arms being disposed on opposite sides of the housing and extending outward from the housing;

a pair of user interfaces, each user interface being movable between a retracted position and an extended position;

a hinge assembly between each arm and the housing so as to allow at least vertical movement of the arm relative to the housing;

a locking mechanism, the locking mechanism allowing a user to releasably select a vertical position of the arm relative to the housing; and

a cable.

2. The exercise station of claim 1, wherein the cable includes a first cable end and a second cable end, the second cable end being connect to one of the pair of user interfaces and the first cable end being connected to the other one of the pair of user interfaces.

3. The exercise station of claim 1 additionally comprising a block-and-tackle mechanism, the cable being attached to the block-and-tackle mechanism.

4. The exercise station of claim 1, wherein each arm has a tubular structure through which the cable passes.

5. The exercise station of claim 1, wherein the hinge assembly includes an inner pulley over which the cable runs.

6. The exercise station of claim 1, wherein each hinge assembly includes a bracket and a lug, the lug being selectively secured relative to the bracket.

7. The exercise station of claim 6, wherein the bracket is disposed on the housing and the lug is disposed on the arm.

8. The exercise station of claim 7, wherein the bracket includes at least two bracket plates, at least a portion of the lug being disposed between the at least two bracket plates.

9. The exercise station of claim 8, wherein the locking mechanism includes a plurality of holes and a dowel, at least a portion of the dowel engaging with one of the plurality of holes when the arm is in the selected vertical position with respect to the housing.

10. The exercise station of claim 9, wherein the plurality of holes are disposed in one of the at least two brackets.

11. The exercise station of claim 10 further comprising a knob, the knob controlling movement of the dowel.

12. The exercise station of claim 11 further comprising a support bracket, the support bracket being fixed to the lug and

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contacting the knob when the dowel is engaged with the selected one of the plurality of holes.

13. The exercise station of claim **11** further comprising a spring, the spring being disposed so as to bias the dowel to move into the selected one of the plurality of holes.

14. The exercise station of claim **11**, wherein one of the plurality of holes is disposed in the bracket so as to allow the arm to be positioned to extend straight down when the dowel is engaged with the hole.

15. The exercise station of claim **11**, wherein one of the plurality of holes is disposed in the bracket so as to allow the arm to be positioned to extend straight up when the dowel is engaged with the hole.

16. The exercise station of claim **11**, wherein the plurality of holes are spaced in an arcuate pattern along an outer edge of the one of the at least two brackets.

17. The exercising station of claim **11**, wherein the pneumatic resistance assembly includes a pneumatic actuator pivotally connected to the housing.

18. The exercise station of claim **17**, wherein the pneumatic actuator is arranged to resist movement of the user interfaces toward the extended position.

19. An exercise station comprising:
a frame;

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a pneumatic resistance secured to the frame;

a pulley system;

an adjustable arm extending outward from the frame;
a user interface being movable between a retracted position and an extended position;

a hinge between the arm and the frame; and

a locking mechanism for releasably selecting a position of the arm relative to the frame.

20. An exercise apparatus comprising:

a frame;

a pneumatic actuator having a cylinder and a piston rod that extends from the cylinder along a stroke axis, the pneumatic actuator being disposed on the frame;

a pulley wheel rotatably connected to the piston rod;

an adjustable arm extending outward from the frame;

a movable user interface;

a hinge between the arm and the frame;

a locking mechanism for releasably selecting a position of the arm relative to the frame; and

a cable.

21. The exercise apparatus of claim **20**, wherein the piston rod is connected to the pulley wheel at a location offset from a center of the pulley wheel.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,955,235 B2
APPLICATION NO. : 12/697103
DATED : June 7, 2011
INVENTOR(S) : Dennis L. Keiser

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

At Column 6, Line 41, change “below” to --below--.

At Column 14, Line 31, change “120°.” to --120°)--.

At Column 17, Line 61, change “ore” to --or--.

At Column 19, Line 18, in Claim 17, change “exercising” to --exercise--.

Signed and Sealed this
Sixth Day of March, 2012

A handwritten signature in black ink that reads "David J. Kappos". The signature is written in a cursive, flowing style with a large initial 'D' and 'K'.

David J. Kappos
Director of the United States Patent and Trademark Office

EXHIBIT 18

(10) **Patent No.:** US 8,052,584 B2
(45) **Date of Patent:** Nov. 8, 2011

4,842,274	A	6/1989	Oosthuizen et al.
4,846,466	A	7/1989	Stima
4,905,676	A	3/1990	Bond et al.
4,907,797	A	3/1990	Gezari et al.
5,209,223	A	5/1993	McGorry et al.
5,336,145	A	8/1994	Keiser
5,526,692	A	6/1996	Keiser
5,722,937	A	3/1998	Smith

(75) Inventor: **Dennis L. Keiser**, Sanger, CA (US)

(73) Assignee: **Keiser Corporation**, Fresno, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1652 days.

FOREIGN PATENT DOCUMENTS

DE 40 31 481 A1 4/1992

(Continued)

(21) Appl. No.: 11/025,575

OTHER PUBLICATIONS

(22) Filed: **Dec. 29, 2004**

International Search Report for application No. PCT/US2005/
013290 mailed on Apr. 19, 2005.

(65) **Prior Publication Data**

(Continued)

US 2005/0239615 A1 Oct. 27, 2005

Primary Examiner — Jerome W Donnelly

(74) *Attorney, Agent, or Firm* — Knobbe Martens Olson & Bear LLP

Related U.S. Application Data

(60) Provisional application No. 60/564,369, filed on Apr. 22, 2004.

(51) **Int. Cl.**
A63B 21/00 (2006.01)

(52) **U.S. Cl.** **482/100; 482/137; 482/8; 482/142**

(58) **Field of Classification Search** 482/1-10,
482/100, 137, 133, 72

See application file for complete search history.

(56) **References Cited**

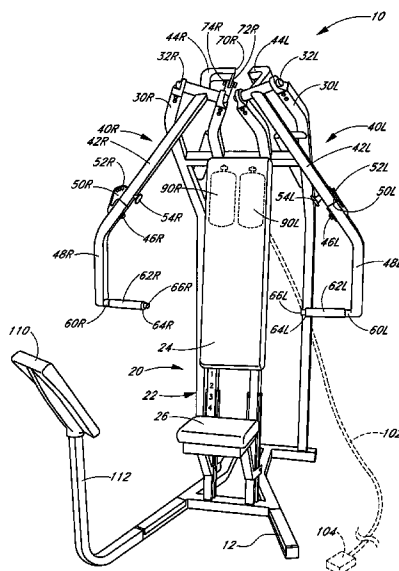
U.S. PATENT DOCUMENTS

3,848,467 A	11/1974	Flavell
4,050,310 A	9/1977	Keiser
4,257,593 A	3/1981	Keiser
4,601,468 A	7/1986	Bond et al.
4,730,829 A	3/1988	Carlson
4,805,455 A	2/1989	DeGiorgio et al.

(57) **ABSTRACT**

An apparatus and method evaluate the power of a muscle group of a user by measuring velocities of an engagement assembly coupled to a resistance element and moved by the user at a highest achievable velocity through a selected number of exercise strokes at each of two resistance levels. A first velocity is determined at a first resistance level. A second velocity is determined at a second resistance level. The first and second velocities are used in combination with the two resistance levels to determine a relationship between the velocity and the resistance level for a particular user. The resistance level where the resistance level and the velocity correspond to an overall maximum power is determined and is displayed for the user so that the user may use the optimum resistance level for training for maximum power generation.

13 Claims, 12 Drawing Sheets



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U.S. PATENT DOCUMENTS

5,997,440	A	12/1999	Hanoun	
6,027,429	A	2/2000	Daniels	
6,231,481	B1	5/2001	Brock	
6,270,445	B1	8/2001	Dean et al.	
6,503,173	B2 *	1/2003	Clem	482/8
6,672,157	B2	1/2004	MacFarlane et al.	
2002/0025890	A1	2/2002	Keiser	
2002/0086774	A1	7/2002	Warner	
2003/0115955	A1	6/2003	Keiser	

FOREIGN PATENT DOCUMENTS

EP	0 199 442	10/1986
EP	0 275 959 A2	7/1988
EP	1 208 876	5/2002
JP	10085363	4/1998
WO	WO 86/06947	12/1986
WO	WO 03/041890 A1	5/2003
WO	WO 2005/000424	1/2005

OTHER PUBLICATIONS

KEISER® Technical Information on A400 Software Version V3.15, Oct. 2, 1997, 4 pages.
KEISER® Documentation on the use of the CAPTURE program, Apr. 1999, 6 pages.
KEISER® A400 Software Manual, Version 4.01, Apr. 1999, pp. 1-11.
Keiser A420 Operations and Maintenance Manual, Rev A, Jun. 28, 2002, pp. 1-26.
iButton Overview, Maxim/Dallas Semiconductor Corporation, 2002, 3 pages.
iButton Applications, Maxim/Dallas Semiconductor Corporation, 2002, 2 pages.
When is a pound not a pound? Keiser compares iron and air, Keiser Corporation, Fresno, California, 2001, pp. 1-4.
Strength Training and Aging, Research Abstracts, Keiser Institute on Aging, 1999, pp. 1-67 and inside cover article.
Keiser Chip System Operation Manual, Keiser Corporation, pp. 1-7.

* cited by examiner

U.S. Patent

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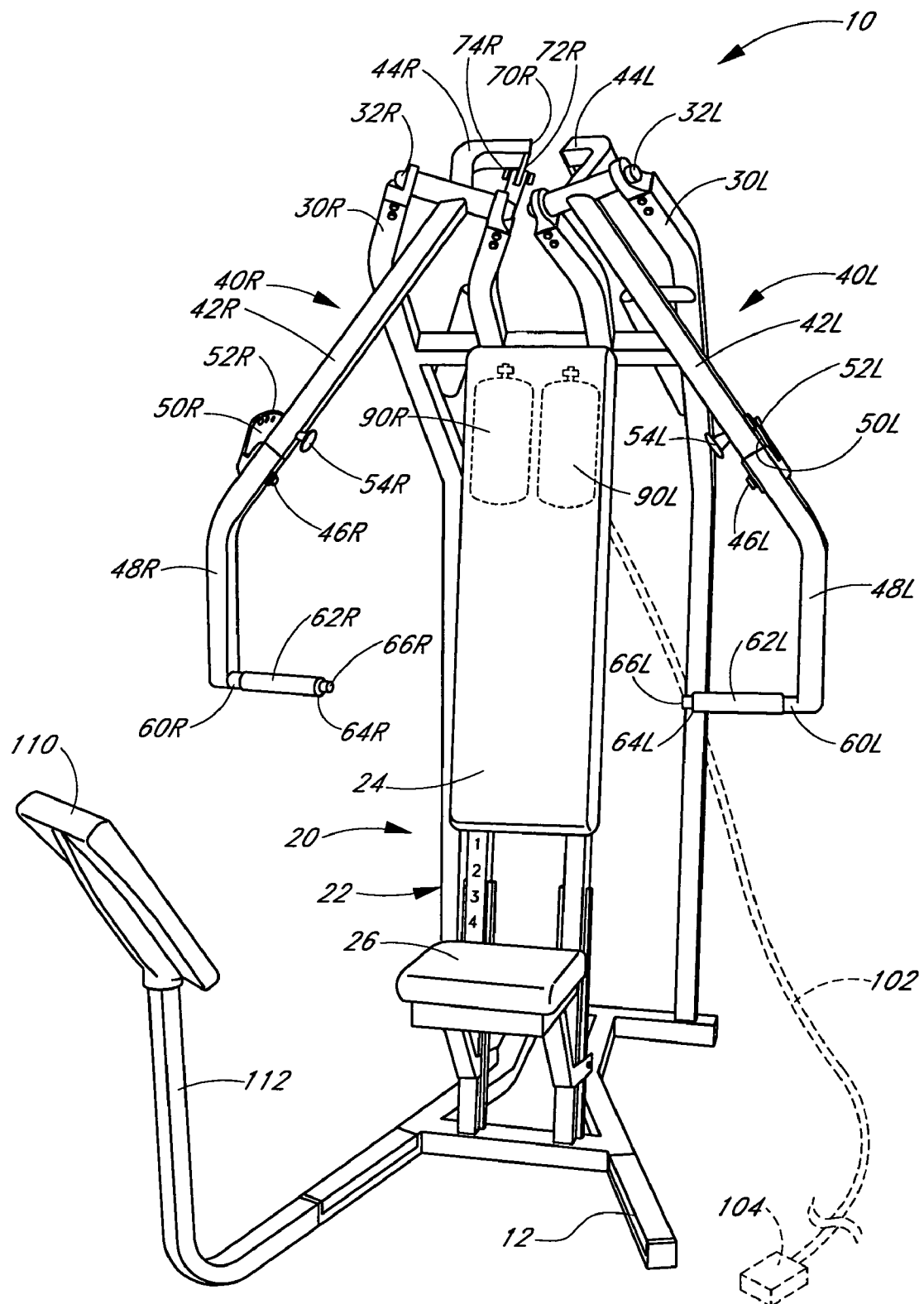


FIG. 1

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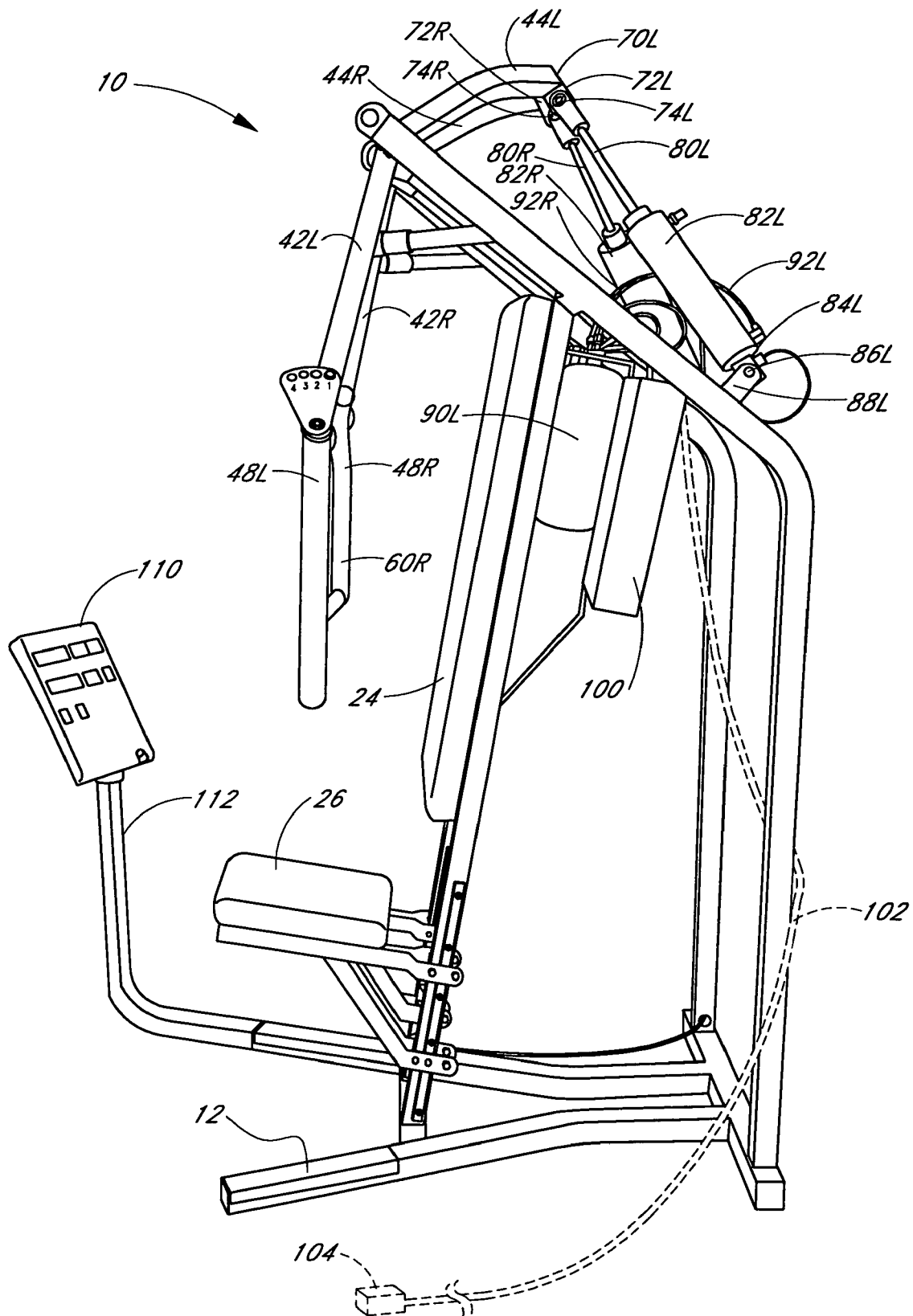


FIG. 2

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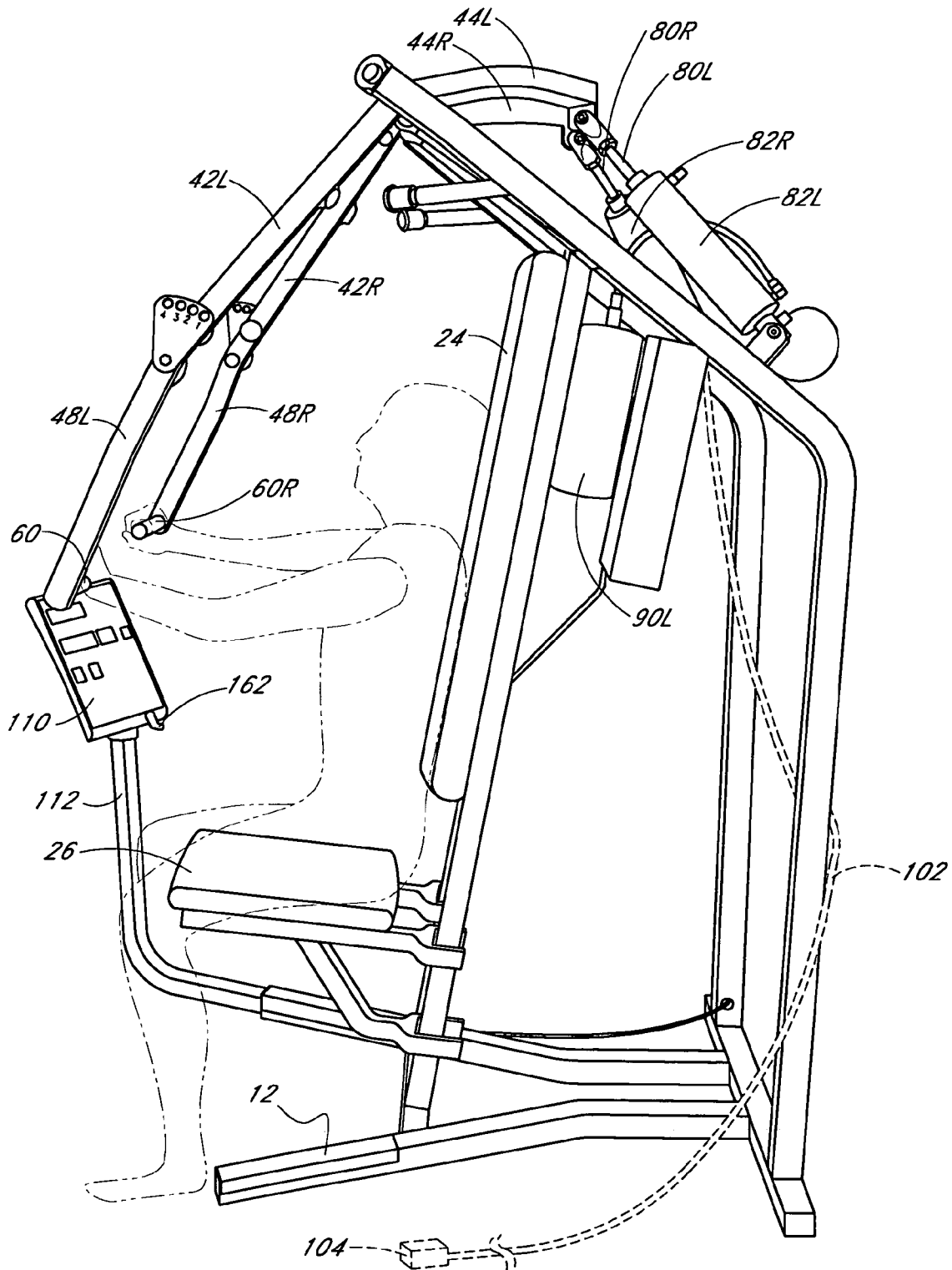


FIG. 3

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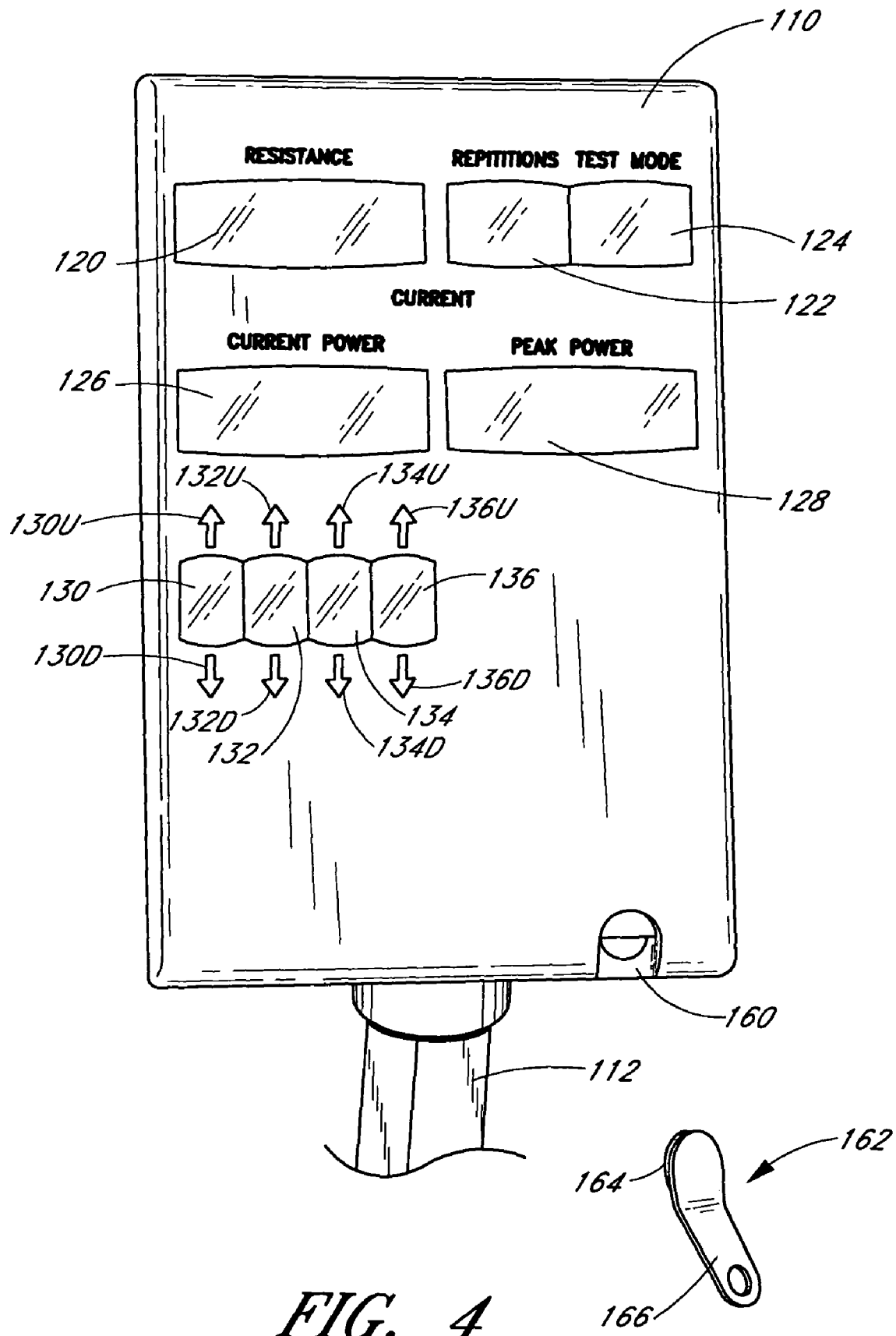


FIG. 4

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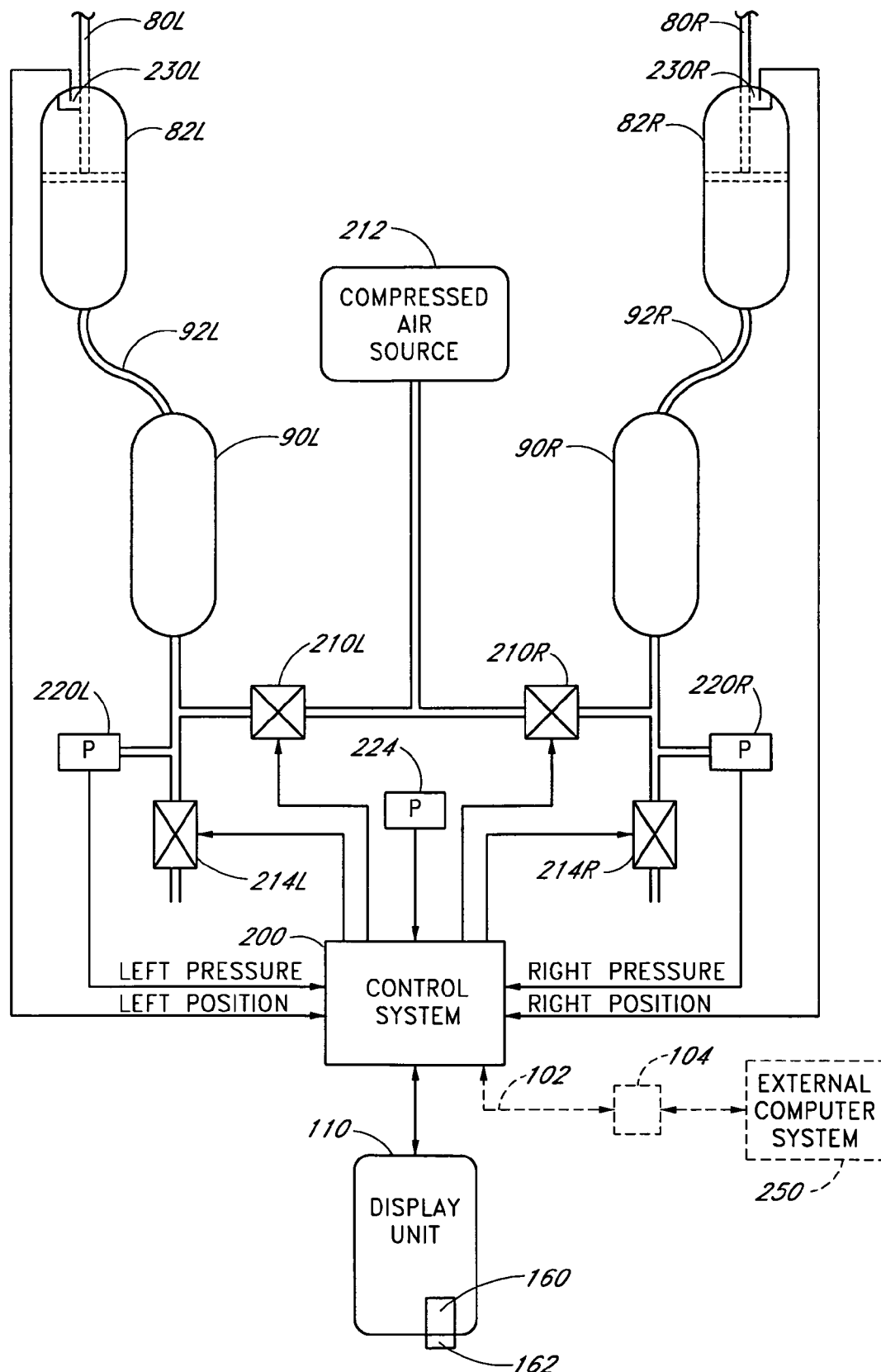


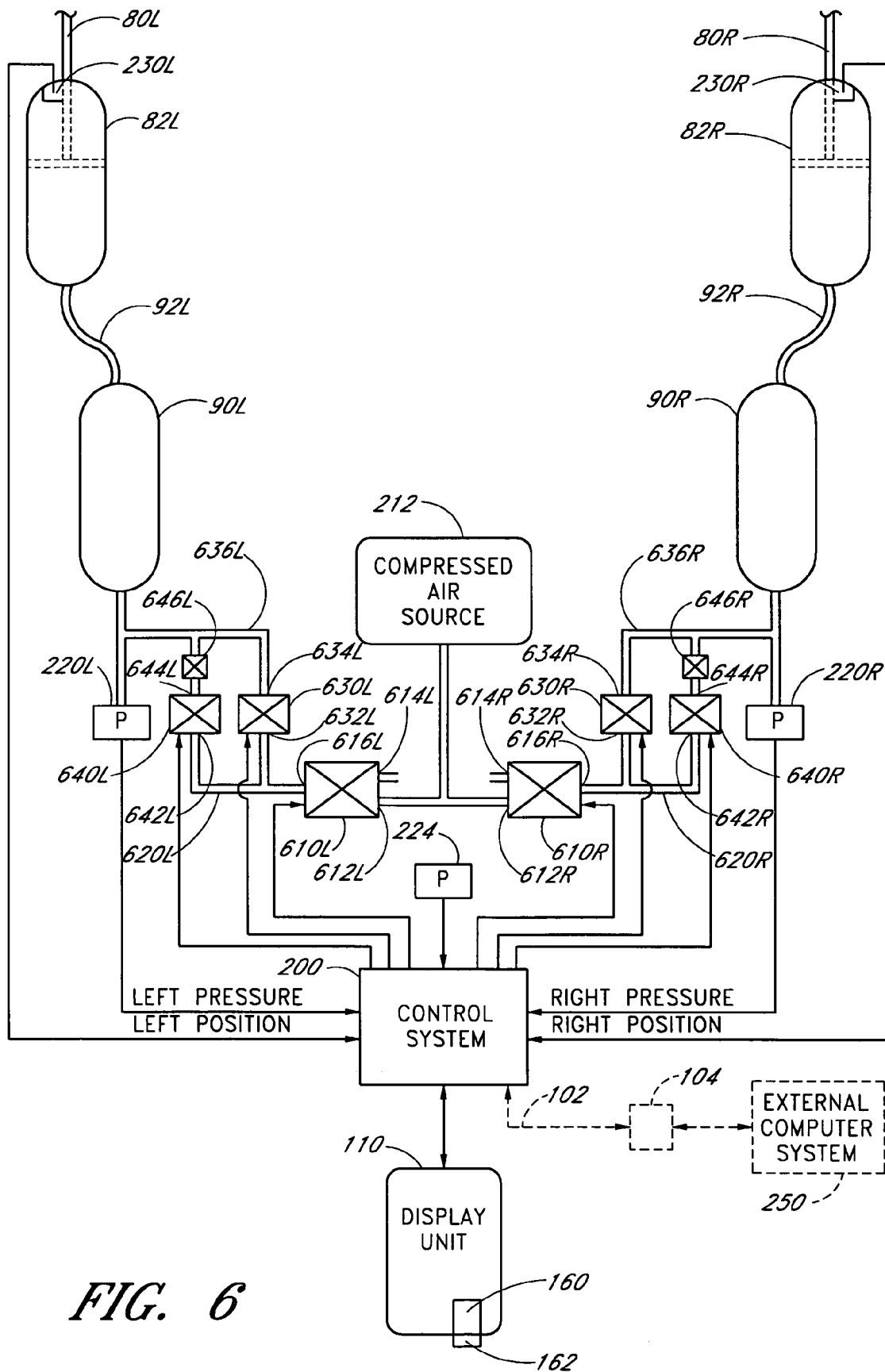
FIG. 5

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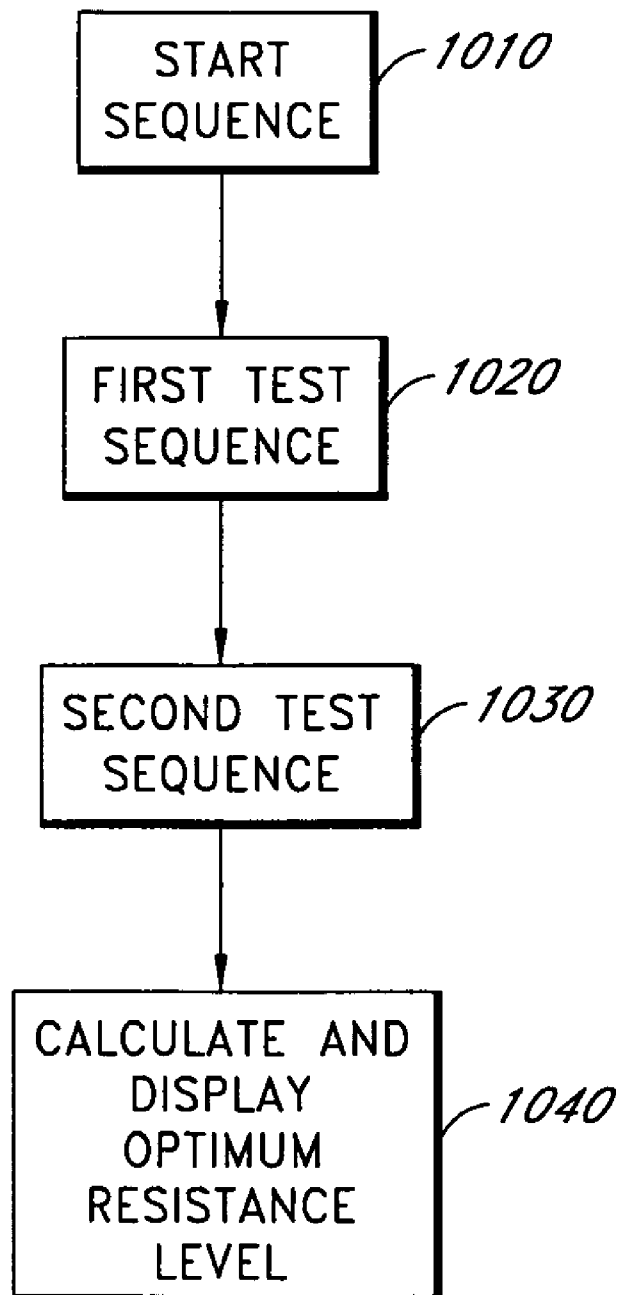


FIG. 7

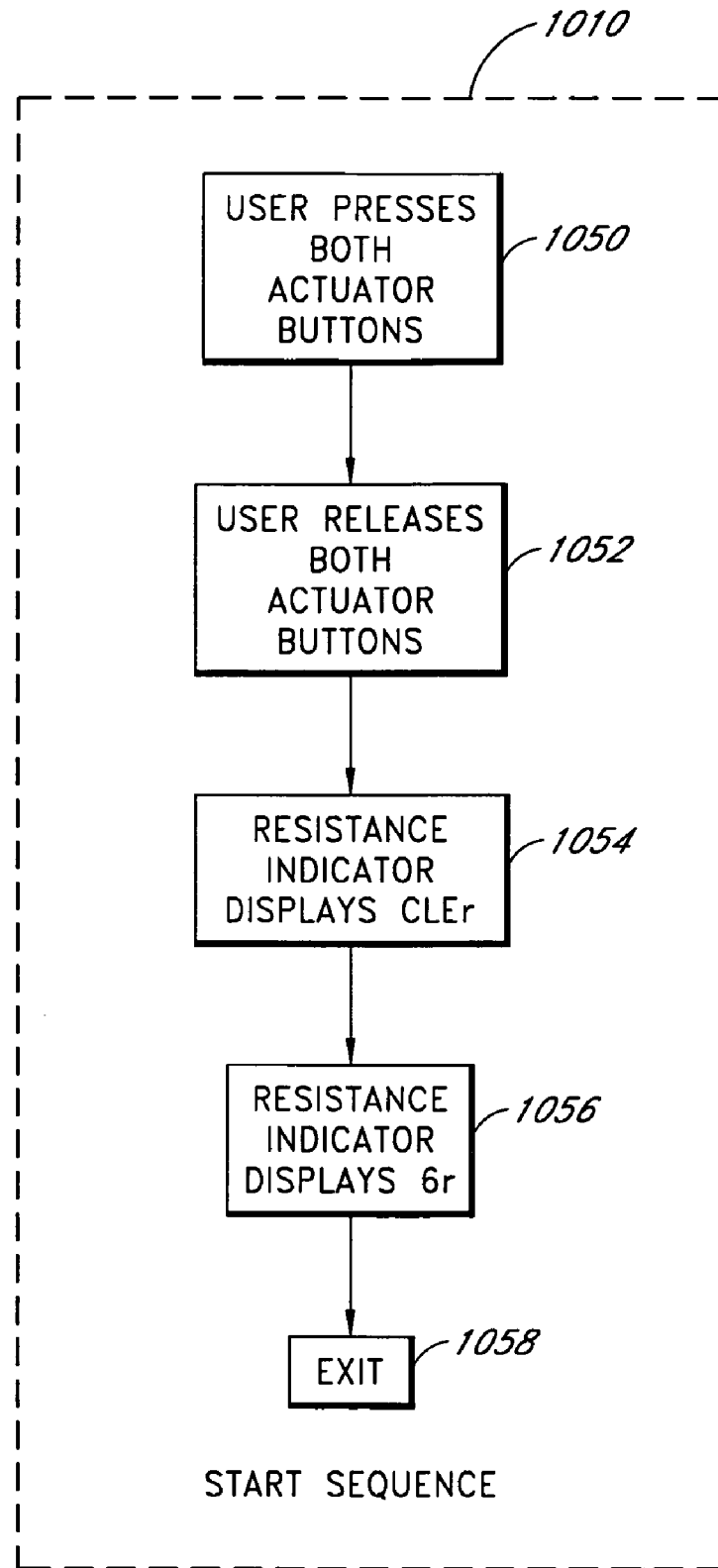


FIG. 8

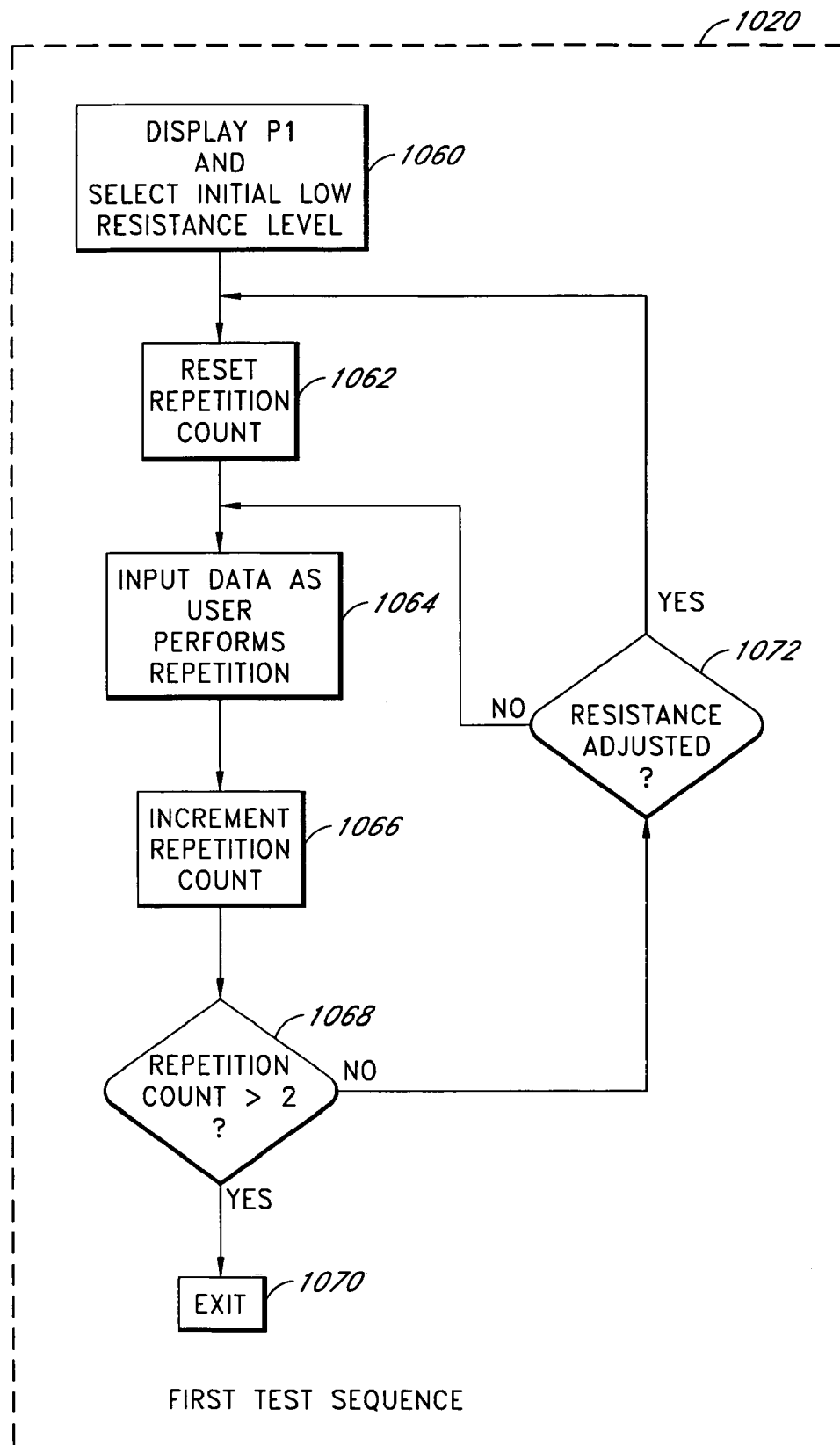


FIG. 9

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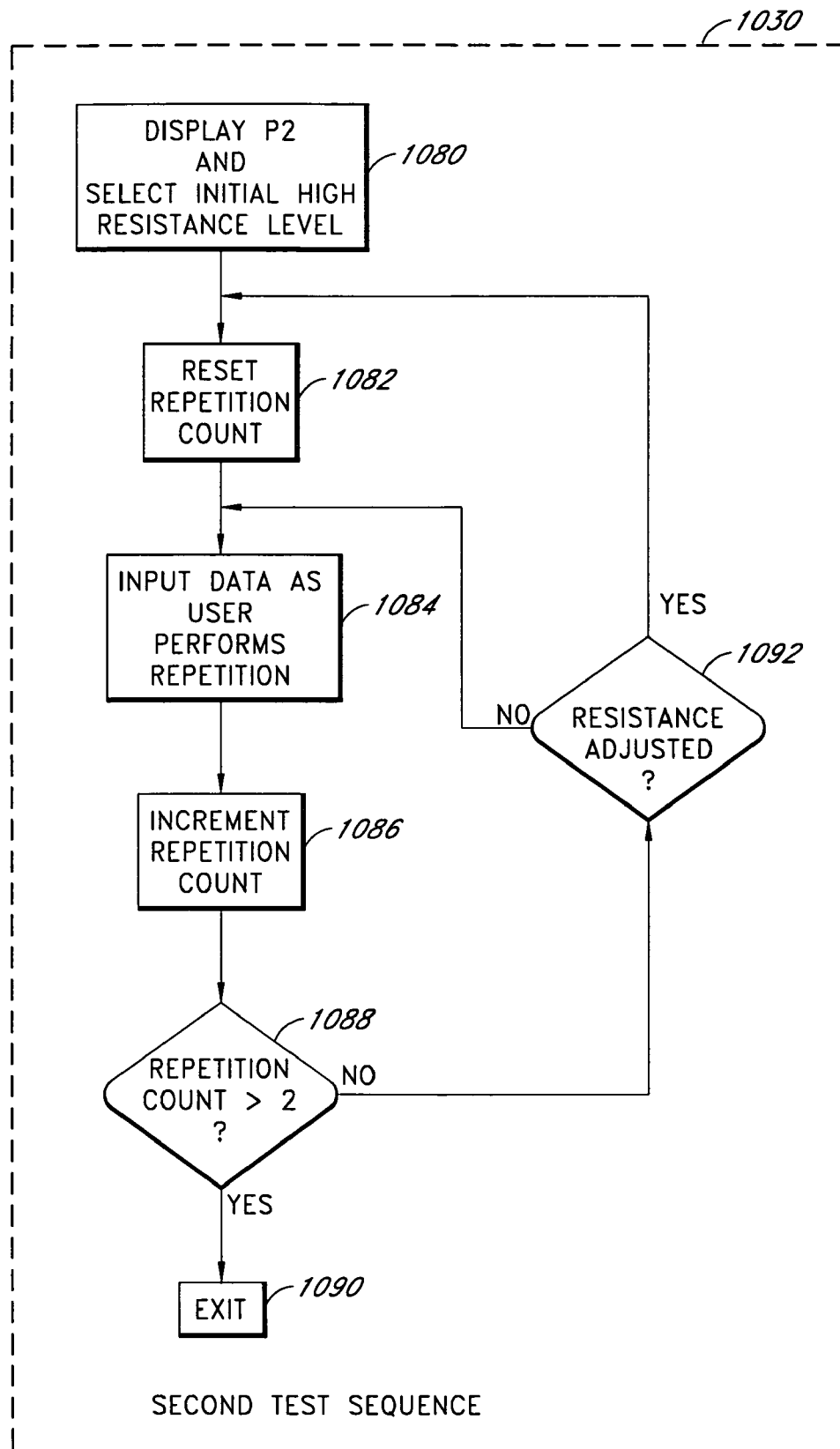


FIG. 10

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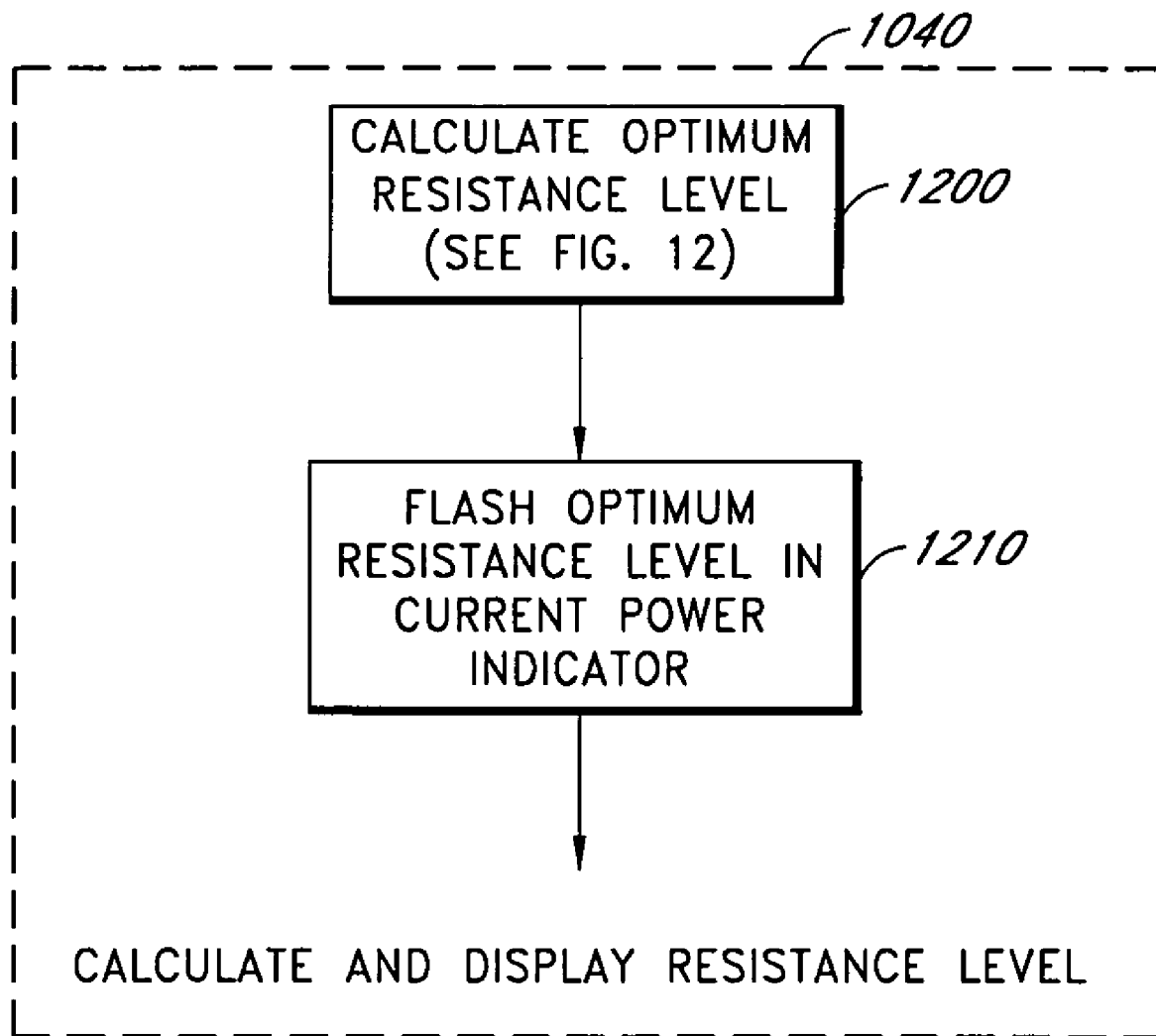


FIG. 11

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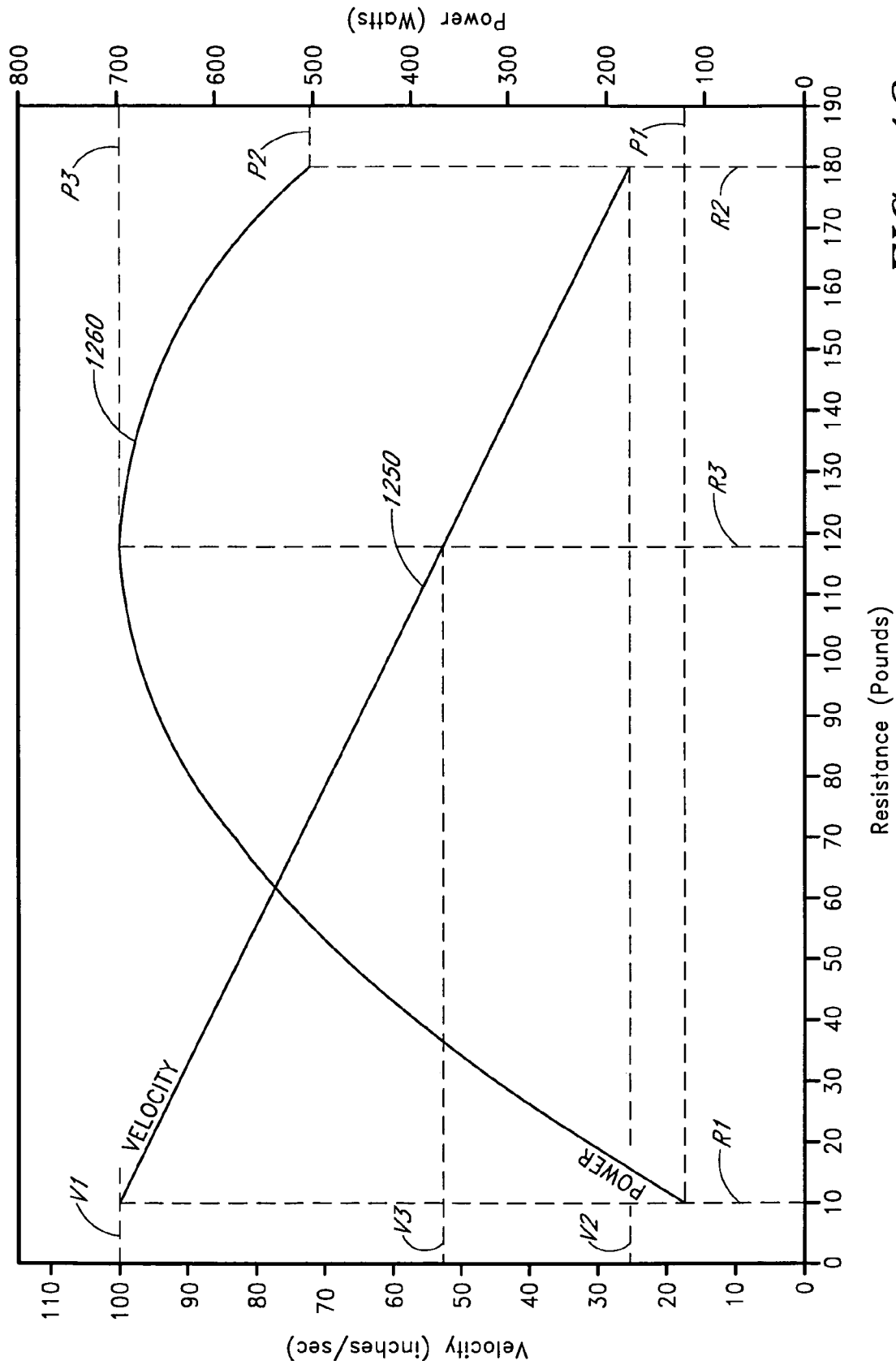


FIG. 12

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SYSTEM AND METHOD FOR DETERMINING A RESISTANCE LEVEL FOR TRAINING A MUSCLE GROUP FOR MAXIMUM POWER GENERATION

RELATED APPLICATIONS

The present application claims the benefit of priority under 35 U.S.C. §119(e) of U.S. Provisional Application No. 60/564,369, filed on Apr. 22, 2004, which is incorporated by reference herein.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is applicable to the fields of fitness, exercise, physical rehabilitation, sports medicine and extremity testing and is directed to methods and apparatuses useable in such fields.

2. Description of the Related Art

Numerous devices have been developed to increase the strength, agility and quickness of athletes and other persons. In addition to enhancing the performance of athletes, such devices are used to improve or maintain the fitness and health of non-athletes, both to enhance the lifestyles of non-athletes and to potentially increase their respective life spans. Such devices range from basic equipment such as barbells, dumbbells, and the like, to increasingly more complex equipment such as universal gyms which enable a user to quickly modify the weights or resistances being used to exercise the user's muscles. See, for example, U.S. Pat. Nos. 4,257,593, 5,526,692 and 5,336,145 to Dennis L. Keiser and U.S. Patent Application Publication No. U.S. 2002/0024590 A1, which describe exercising apparatuses and related devices using pneumatic devices to provide controllable resistances, and which are incorporated by reference herein. In particular, such pneumatic exercising apparatuses advantageously reduce or eliminate the inertial effects of conventional weights wherein the force required to start moving a weight and the tendency of the weights to continue moving cause the forces required during each exercising stroke to vary throughout the stroke. Such pneumatic apparatuses provide a generally constant resistance throughout the exercising stroke.

In addition to being used for the development of strength, agility and quickness, exercising apparatuses can be used to measure strength, agility and quickness of a person. For example, a person's ability to lift weights against the force of gravity or a corresponding ability to move against a resistance can be measured at different times to determine whether such characteristics are improving in response to an exercise program or in response to therapy. Such measurements can also be used for evaluation purposes to determine whether one or more muscles or muscle groups are not performing adequately so that a therapist or a fitness trainer, for example, can develop a program of therapy or training more specifically directed to the inadequately performing muscles.

Historically, measurement and evaluation of muscular performance have concentrated on measuring the strength of a muscle or muscle group (e.g., measuring the amount of weight that can be lifted). However, it has been determined that strength alone does not accurately represent the performance of muscles. A person's muscles may be able to lift an adequate amount of weight, but may be too slow to be useful for many purposes. For example, an athlete putting the shot at a track and field contest must have the strength to easily move the sixteen-pound shot; however, the strength must be coupled with sufficient speed to cause the shot to be propelled

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with enough velocity to travel in excess of 70 feet (e.g., 70 feet, 11.25 inches by Randy Barnes at the 1996 Atlanta Olympics). In contrast, some activities require the ability to move very heavy objects at much lower velocities. Thus, although the power requirements may be similar for two activities, the forces and velocities at which the maximum power is required may be different for the two activities.

From the foregoing it should be understood that a more meaningful measurement of the performance of a person's muscles is a measurement of power (e.g., a measurement of the force applied by the muscles times the velocity of the movement). The average power over an exercise stroke, for example, can be accomplished by timing the duration of the stroke and measuring the distance traveled to determine the average velocity, and then multiplying the average velocity by the force (e.g., the weight moved or the resistance overcome by the muscles). However, because of the structure of most appendages in a person's body, the speed of an exercise stroke will vary throughout the stroke as the appendage varies from full extension to full contraction and the leverage of the muscles against the moving portion of the appendage changes.

During the course of an exercise or other physical development program an athlete or other user strives to continue improving his or her own capabilities with respect to strength and power. In a conventional training regimen, the user maintains a written log of the exercises performed on a given date, including, for example, the settings of the various exercise machines, the number of sets performed and the number of repetitions per set. Such written logs are often incomplete and may include mistakes in the entries of the data, either when writing the data or in remembering the number of sets and repetitions to record at each machine setting. Furthermore, in order to provide a meaningful summary of the exercises performed, it is necessary to transfer the information from the written log to another media (e.g., to storage media in a computer).

SUMMARY OF THE INVENTION

In view of the foregoing, it can be seen that a need exists for an improved apparatus and method for enabling an athlete or other user to maintain records of exercises performed during an exercise regimen or other program so that the user can determine whether the user's physical capabilities are improving. Furthermore, a need exists for a more meaningful way to determine a user's physical capabilities and to assist the user in training at a level best suited for improving the user's physical capabilities.

One aspect in accordance with embodiments of the present invention is a method for selecting a resistance level to use to train a muscle group for maximum power generation on an exercise apparatus having an engagement assembly movable against a controllable resistance by the muscle group of a user and having a monitoring system that measures a velocity of movement of the engagement assembly. The method comprises adjusting the controllable resistance to a first resistance level. The method monitors the movement of the engagement assembly against the first resistance level to determine a first velocity of movement of the engagement assembly. The method adjusts the controllable resistance to a second resistance level different from the first resistance level. The method monitors the movement of the engagement assembly against the second resistance level to determine a second velocity of movement of the engagement assembly. The method uses the first and second resistance levels and the first and second velocities of movement to determine a relation-

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ship between the resistance level and the velocity of movement of the engagement assembly. The method uses the relationship between the resistance levels and the velocities of movement to select a resistance level that corresponds to an overall maximum power generated by the user as the resistance level to use for training the muscle group for maximum power.

Preferably, the method monitors the movement of the engagement assembly against the first resistance level during a plurality of repetitions of the movement of the engagement assembly and selects as the first velocity a maximum velocity achieved in the plurality of movements. The monitoring system advantageously monitors a maximum number of repetitions before selecting the first velocity. If the first resistance level of the controllable resistance is adjusted to an adjusted first resistance level, the method resets the repetitions such that the first velocity is selected only after the maximum number of repetitions are performed at the adjusted first resistance level. The monitoring system advantageously displays a number representing the power generated during each repetition to provide the user with an incentive to increase the power on a subsequent repetition.

Also preferably, the method monitors the movement of the engagement assembly against the second resistance level during a plurality of repetitions of the movement of the engagement assembly and selects as the second velocity a maximum velocity achieved in the plurality of movements. The monitoring system monitors advantageously monitors a maximum number of repetitions before selecting the second velocity. If the second resistance level of the controllable resistance is adjusted to an adjusted second resistance level, the method resets the repetitions such that the second velocity is selected only after the maximum number of repetitions are performed at the adjusted second resistance level. The monitoring system advantageously displays a number representing the power generated during each repetition at the second resistance level to provide the user with an incentive to increase the power on a subsequent repetition.

Another aspect in accordance with an embodiment of the present invention is an apparatus for testing a muscle group to determine a resistance level to use to train the muscle group for maximum power generation. The apparatus comprises a controllable resistance and an engagement assembly movable against the controllable resistance by using a muscle group of a user. The apparatus further comprises a monitoring system that measures a velocity of movement of the engagement assembly when the controllable resistance is adjusted to a first resistance level to determine a first velocity. The monitoring system measures the velocity of movement of the engagement assembly when the controllable resistance is adjusted to a second resistance level different from the first resistance level to determine a second velocity. The monitoring system determines a relationship between the resistance level and the velocity achieved by the muscle group and selects a resistance level as a training resistance level where the training resistance level and a velocity at the training resistance level correspond to an overall maximum power. The apparatus further comprises a display unit that displays the training resistance level as the level to select for the controllable resistance for training the user at maximum power generation.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the present invention are described below in connection with the accompanying drawing figures in which:

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FIG. 1 illustrates a front view of an exercise and evaluation apparatus in accordance with a preferred embodiment;

FIG. 2 illustrates a side view of the exercise and evaluation apparatus of FIG. 1;

FIG. 3 illustrates a side view of the exercise and evaluation apparatus of FIGS. 1 and 2 with the position of a user of the apparatus shown in phantom;

FIG. 4 illustrates a front view of a display panel for the exercise and evaluation apparatus of FIGS. 1, 2 and 3 and the data key that enables the evaluation features in accordance with a preferred embodiment;

FIG. 5 illustrates a simplified control diagram in accordance with a preferred embodiment;

FIG. 6 illustrates a simplified control diagram similar to FIG. 5 but having a different configuration of control valves;

FIG. 7 illustrates a flow chart of a test mode in accordance with a preferred embodiment;

FIG. 8 illustrates a flow chart of the start sequence of the test mode of FIG. 7 in accordance with a preferred embodiment;

FIG. 9 illustrates a flow chart of the first test sequence in the test mode of FIG. 7 in accordance with a preferred embodiment;

FIG. 10 illustrates a flow chart of the second test sequence in the test mode of FIG. 7 in accordance with a preferred embodiment;

FIG. 11 illustrates a flow chart of a procedure for determining an optimum resistance level to be used when exercising to increase a user's power; and

FIG. 12 illustrates a graphical representation of the procedure in FIG. 11 for determining the optimum resistance level based on the relationship between resistance level, velocity and power.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIGS. 1, 2, 3 and 4 illustrate an embodiment of an exemplary exercise apparatus 10 that can be used advantageously in connection with embodiments of the present invention for evaluating power generated by a muscle group when moving against levels of resistance that are varied to correspond to varying weights. Although described herein with respect to the apparatus 10, it should be understood that embodiments of the present invention can be incorporated into other exercise apparatuses. For example, the apparatus 10 is configured as a "chest press." The apparatus 10 can also be configured in other suitable configurations. Examples of other exercise equipment on which the performance measurement system can be used include, without limitation, a leg press, a leg extension machine, a leg curl machine, a standing hip machine, an abdominal machine, a lower back machine, an upper back machine, a lateral pull down machine, a military press machine, a triceps machine, an arm curl machine, a seated butterfly machine, a seated calf machine, a lateral shoulder raise machine, a squat machine, and a hip abductor machine, such as the types available commercially from Keiser Corporation, Fresno, Calif.

The apparatus 10 comprises a frame 12 having a lower portion that rests on a floor of an exercise facility or a fitness evaluation facility. The frame 12 has a generally vertical front portion 20 that supports a seat assembly 22. The seat assembly 22 comprises a seat back portion 24 and a seat bottom portion 26. Preferably, the seat bottom portion 24 is adjustable vertically to accommodate variations in the physical

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characteristics of users. In alternative embodiments, the seat back portion **24** is also adjustable to accommodate variations in lengths of the users' arms.

The frame **12** includes a left top portion **30L** and a right top portion **30R**. The two top portions **30L**, **30R** are cantilevered over the seat assembly **22**. The left top portion **30L** has a left hinge **32L** positioned at the most forward and upward end. Similarly, the right top portion **30R** has a right hinge **32R** positioned at the most forward and upward end. As used herein, "left" and "right" are defined with respect to the position of a user of the apparatus **10**. Thus, in the view shown in FIG. **1**, the left top portion **30L** and the left hinge **32L** are on the right side of the drawing figure, and the right top portion **30R** and the right hinge **32R** are on the left side of the drawing figure.

A left lever **40L** is pivotally mounted to the left hinge **32L**, and a right lever **40R** is pivotally mounted to the right hinge **32R**. As described below, the left lever **40L** and the right lever **40R** in combination with their respective components each comprises an independent engagement apparatus for coupling the power from a user to respective resistance elements. The resistance elements are preferably implemented by left and right pneumatic cylinders, which are also described below.

The left lever **40L** comprises a lower lever portion **42L** that extends generally below and slightly forward of the left hinge **32L**. The left lever **40L** further comprises an upper lever portion **44L** that extends generally above and to the rear of the left hinge **32L**. In the illustrated embodiment, the lower lever portion **42L** and the upper lever portion **44L** comprise a unitary structure having the left hinge **32L** formed at an intermediary location of the structure such that when the lower lever portion **42L** moves forward and generally upward, the upper lever portion **44L** moves rearward and generally downward.

Preferably, the lower lever portion **42L** includes a hinge **46L** at the lower end thereof. An extended lever portion **48L** pivotally mounted to the lower lever portion **42L** via the hinge **46L**. An adjustment selector **50L** is mounted to the extended lever portion **48L** at the location of the hinge **46L**. The adjustment selector **50L** has a plurality of holes **52L** formed therein (e.g., four holes in the illustrated embodiment). The holes **52L** are selectively engageable with a spring-loaded pin **54L** near the lower end of the lower lever portion **42L**. The spring-loaded pin **54L** can be temporarily disengaged from one of the holes **52L** and the extended lever portion **48L** can be pivoted about the hinge **46L** to change the angle of the extended lever portion **48L** with respect to the lower lever portion **42L** to adapt the position of the extended lever portion **48L** to the physical characteristics of a particular user. The spring-loaded pin **54L** is re-engaged the most closely aligned one of the holes **52L** to restrain the extended lever portion **48L** at the selected angle.

In like manner, the right lever **40R** comprises elements that generally correspond to the elements of the left lever **40L**. The elements of the right lever **40R** are positioned in similar locations and operate in similar manners as the corresponding elements of the left lever **40L**. In particular, the right lever **40R** comprises a lower lever portion **42R**, an upper lever portion **44R**, a hinge **46R**, and an extended lever portion **48R**. An adjustment selector **50R** has a plurality of holes **52R**. A selectable one of the holes **52R** is engageable with a spring-loaded pin **54R** to adjust the angle of the extended lever portion **48R** with respect to the lower lever portion **42R**.

In alternative embodiments, the extended lever portions **48L**, **48R** may be positioned at a fixed angle with respect to

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the respective lower lever portions **42L**, **42R** such that the hinges **46L**, **46R** and the selectors **50L**, **50R** are not needed.

The left lever **40L** includes a left handgrip **60L** that extends inward (e.g., towards the right) from the left extended lever portion **48L**. Similarly, the right lever **40R** includes a right handgrip **60R** that extends inward (e.g., towards the left) from the right extended lever portion **48R**. In the illustrated embodiment, the handgrips **60L**, **60R** are positioned generally perpendicularly to the respective extended lever portions **48L**, **48R**. Each handgrip **60L**, **60R** has a length sufficient to accommodate the width of a user's hand and to further accommodate variations in the position of a user's hand. Preferably, each handgrip **60L**, **60R** is cylindrical and has a respective gripping surface **62L**, **62R** mounted thereon to assist a user in grasping the handgrips. The gripping surfaces **62L**, **62R** may advantageously be padded for the comfort of the user's hands.

The exposed end **64L** of the left handgrip **60L** supports a left actuator button **66L**. Similarly, the exposed end **64R** of the right handgrip **60R** supports a right actuator button **66R**. By pressing one of the actuator buttons **66L** or **66R** or by pressing both buttons **66L** and **66R**, a user is able to control various aspects of the operation of the apparatus **10**, which will be discussed below.

A user seated in the seat assembly **22** is able to grip the handgrips **60L**, **60R** and apply forward forces to the extended lower portions **48L**, **48R** of the levers **40L**, **40R** to cause the extended lower portions **48L**, **48R** to move generally forwardly and upwardly. The levers **40L**, **40R** pivot about the respective hinges **32L**, **32R** such the respective upper lever portions **44L**, **44R** move generally rearward and downward.

Note that in the illustrated embodiment, the left lever **40L** and the right lever **40R** operate substantially independently. For example, one lever can be moved while the other lever remains at rest. As a further example, the two levers can be moved at different rates. In alternative embodiments (not shown), the two levers can be advantageously interconnected to move as a unit when the ability to exercise each arm independently is not needed.

A rearmost end **70L** of the left upper lever portion **44L** includes a left upper pivot mount **72L**. The left upper pivot mount **72L** supports a pivot pin **74L**. A left connecting rod **80L** extends from a first end of a left pneumatic cylinder **82L** and is connected to the left upper lever portion **44L** at the left upper pivot mount **72L** via the pivot pin **74L**.

A second end of the left pneumatic cylinder **82L** includes a lug **84L** having a pivot pin **86L** mounted therein. The pivot pin **86L** engages a left lower pivot mount **88L** on a generally rearward portion of the left top portion **30L** of the frame **12**. Movement of the left upper lever portion **44L** rearwardly and downwardly in response to forward force applied to the left handgrip **60L** by a user causes the left connecting rod **80L** to be moved into the left pneumatic cylinder **82L**. An end (not shown) of the left connecting rod **80L** comprises a piston that slides within the left pneumatic cylinder **82L**. The left connecting rod **80L** and the left pneumatic cylinder **82L** comprise a linear actuator which functions as a resistance assembly for the left lever **40L**. As the left connecting rod **80L** moves into the left pneumatic cylinder **82L**, the left connecting rod **80L** pivots with respect to the left upper pivot mount **72L**, and the second end of the left pneumatic cylinder **82L** pivots with respect to the left lower pivot mount **88L** so that the left connecting rod **80L** can move freely with respect to the left pneumatic cylinder **82L** without binding.

Similarly, an end **70R** of the right upper lever portion **44R** includes a right upper pivot mount **72R**. The right upper pivot mount **72R** supports a pivot pin **74R**. A right connecting rod

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80R extends from a first end of a right pneumatic cylinder **82R** and is connected to the right upper lever portion **44R** at the right upper pivot mount **72R** via the pivot pin **72R**.

A second end (not shown) of the right pneumatic cylinder **82R** includes a lug (not shown) having a pivot pin (not shown) 5 mounted therein. The pivot pin engages a right lower pivot mount (not shown) on a generally rearward portion of the right top portion **30R** of the frame **12**. Movement of the right upper lever portion **44R** rearwardly and downwardly in response to forward force applied to the right handgrip **60R** 10 by a user causes the right connecting rod **80R** to be moved into the right pneumatic cylinder **82R**. An end (not shown) of the right connecting rod **80R** comprises a piston that slides within the right pneumatic cylinder **82R**. The right connecting rod **80R** and the right pneumatic cylinder **82R** comprise a linear 15 actuator which functions as a resistance assembly for the right lever **40R**. As the right connecting rod **80R** moves into the right pneumatic cylinder **82R**, the right connecting rod **80R** pivots with respect to the right upper pivot mount **72R**, and the second end of the right pneumatic cylinder **82R** pivots with 20 respect to the right lower pivot mount so that the right connecting rod **80R** can move freely with respect to the right pneumatic cylinder **82R** without binding.

Within each pneumatic cylinder **82L**, **82R**, the respective piston divides the cylinder body into two variable volume 25 chambers. At least one of the chambers is a charged chamber that selectively communicates with a compressed air source (shown schematically in FIG. 5) and with the atmosphere so as to provide the desired resistance. The other chamber can be open to the atmosphere; however, in some applications, both chambers can be pressurized (e.g., be of equal pressure), can 30 selectively communicate with the atmosphere and/or can communicate with each other. In the illustrated embodiment, however, one of the chambers communicates with the atmosphere so as not to resist movement of the piston.

The pneumatic cylinders **82L**, **82R** may be advantageously constructed from metal or other suitable materials. In one preferred embodiment, the pneumatic cylinders **82L**, **82R** and the internal pistons comprise a polymer (e.g., plastic) to 40 reduce the manufacturing costs and the weight of the resistance assemblies.

In the illustrated embodiment, the respective connecting rod **80L**, **80R** extends through the variable volume chamber open to the atmosphere. The respective connecting rod **80L**, **80R** moves linearly along a stroke axis as the piston slides 45 within the cylinder bore in the respective pneumatic cylinder **82L**, **82R**. The stroke lengths of the connecting rods **80L**, **80R** are sufficient to provide the desired strokes for the upper lever portions **44L**, **44R**.

In the illustrated embodiment, the internal chamber proximate the respective second end of each pneumatic cylinder **82L**, **82R** (e.g., the lower chamber of each cylinder) is pressurized. The lower chamber of the left pneumatic cylinder **82L** communicates with at least one left accumulator **90L** via a pneumatic tube **92L**, as shown more clearly in FIG. 5. 55 Similarly, the lower chamber of the right pneumatic cylinder **82R** communicates with at least one right accumulator **90R** via a pneumatic tube **92R**. The two accumulators **90L**, **90R** are located behind the seat back portion **24** in the illustrated embodiment and are secured to the frame **12**. The pneumatic tubes **92L**, **92R** function as respective air equalization lines that interconnect the accumulators **90L**, **90R** with the respective pneumatic cylinders **82L**, **82R** so as to expand effectively the variable volumes of the lower chambers of the two cylinders. In this manner, the effective air volume of the cylinder is 65 increased, and air pressure thus will not increase as dramatically when the piston is moved.

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Each accumulator **90L**, **90R** and the respective upper chamber within the pneumatic cylinders **82L**, **82R** also selectively communicate with the compressed air source (FIG. 5) and with the atmosphere. In the illustrated example, the compressed air source may be, for example, an air compressor, which can be remotely disposed relative to the exercise apparatus. The compressed air source communicates with the upper chambers through a respective inlet valve (shown schematically in FIG. 5). In the illustrated embodiment, the inlet 5 valves for both pneumatic cylinders **82L**, **82R** are controlled by the left actuator button **66L** on the left handgrip **60L** when a user manually controls the resistance of the two pneumatic cylinders. The left actuator button **66L** is selectably activated by a user to actuate the inlet valves to add air pressure to the lower chamber of each pneumatic cylinder **82L**, **82R**. The lower chamber is also referred to as the charged side of each cylinder.

The apparatus **10** further includes a control unit enclosure **100** that houses a control system **200** (described in more detail below in connection with FIGS. 5-11). In certain embodiments, the control system **200** within the enclosure **100** is optionally capable of communicating with an external computer system **250** (FIGS. 5 and 6) via a communications cable **102** and an adapter unit **104** (both shown in phantom to 10 indicate that the elements are optional). The communications cable **102**, the adapter unit **104** and the external computer system **250** are not necessary to an understanding of embodiments described herein and will not be discussed further.

The apparatus **10** further includes a control and display panel **110** supported on a riser **112** so that the display panel **110** is positioned in front of a user seated in the seat assembly 22. 15

As shown in FIG. 4, the display panel comprises a RESISTANCE indicator **120** that displays the total resistance 30 applied to the two handgrips **60L**, **60R**. In the embodiment described herein, the total resistance may be selected by a user by selectively activating the right actuator button **66R** to increase the resistance and selectively activating the left actuator button **66L** to decrease the resistance. In alternative 35 embodiments, the resistance may also be selected automatically. The resistance is displayed as the force (in pounds or kilograms) required to move the handgrips **60L**, **60R** and is calibrated to be equivalent to the force required to move a corresponding stack of conventional weights.

In alternative embodiments of the apparatus **10** in which handgrips are not used or where hand-operated actuators cannot be readily incorporated, the controls for increasing and decreasing the resistance may be implemented as foot pedals (not shown).

In certain embodiments in which the display unit **110** and control system **200** are powered by batteries rather than by AC power, the resistance indicator **120** is advantageously caused to display OFF rather than a resistance value in order to indicate that the control system **200** and display unit **110** have gone into a low power consumption (e.g., "sleep") mode to increase battery life. A user wanting to activate a system in the low power consumption mode can push one of the resistance change buttons (e.g., the left actuator button **66L** or the right actuator button **66R** in the illustrated embodiment, or a foot 60 pedal in an alternative embodiment) or the user can insert a data key **162**. The resistance indicator can also be advantageously used to display the characters **Loba** to indicate that the batteries supplying the control system **200** and the display unit **110** are low and need to be replaced.

The display unit **110** also advantageously includes a REPETITIONS indicator **122**, a TEST MODE indicator **124**, a CURRENT POWER indicator **126**, a PEAK POWER indi-

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cator **128**, a first machine adjustment indicator **130**, a second machine adjustment indicator **132**, a third machine adjustment indicator **134**, and a fourth machine adjustment indicator **136**. The display unit **110** also includes respective up arrows **130U**, **132U**, **134U**, **136U**, above the respective machine adjustment indicators, and includes respective down arrows **130D**, **132D**, **134D**, **136D**, below the respective machine adjustment indicators. Each of the up arrows and down arrows defines a respective location of a switch beneath the faceplate of the display unit **110**. Each switch can be selectively activated by a user pressing on the respective arrow.

The machine adjustment indicators **130**, **132**, **134**, **136** are advantageously used to indicate various settings of the apparatus **10** that can be adjusted by users to accommodate differences in body structures. For example, in the embodiment described herein, the first adjustment indicator **130**, for example, is advantageously assigned to indicate the vertical position of the seat bottom portion **24** of the seat assembly **22**. In the illustrated embodiment, the second adjustment indicator **132**, for example, is advantageously assigned to indicate the position of arm adjustment selectors **50L**, **50R**. In alternative embodiments where the seat back portion **24** of the seat assembly **22** is adjustable, one of the adjustment indicators may be assigned to indicate the position of the seat back portion **24**. In other types of exercise equipment (for example, equipment having an adjustable chest pad, or the like), an adjustment indicator is advantageously assigned to indicate the position of the adjustable portion of the equipment. It should be understood that in exercise equipment having fewer than four adjustable portions, one or more of the adjustment indicators may not be used. The use of the adjustment indicators in connection with embodiments of the present application will be described in more detail below.

The display unit **110** includes a data port recess **160** near the lower right corner of the display unit **110**. The data port recess **160** is configured to receive a data key **162**. The data key **162** comprises an integrated circuit **164** and a supporting handle **166**. In one embodiment, the integrated circuit **164** on the data key **162** comprises an iButton® data device available from Maxim/Dallas Semiconductor Corporation. A compatible interface, also available from Maxim/Dallas Semiconductor Corporation, is positioned in the data port recess **160** of the display unit **110** to communicate with the integrated circuit **164** when the data key **162** is present. A non-volatile memory within the integrated circuit **164** stores user identification information and advantageously includes historical information related to the user.

The functions of the indicators, the switches, the data port recess and the data key with respect to the embodiment herein are described in more detail below.

The control unit enclosure **100** is pneumatically connected to the accumulators **90L**, **90R** and is thus connected to the charged side of the pneumatic cylinders **82L**, **82R**. The control unit enclosure is also pneumatically connected to a compressed air source (not shown). Within the control unit enclosure **100**, a respective inlet valve (shown schematically in FIG. 5, discussed below) for each accumulator **90L**, **90R** selectively routes compressed air to the accumulator to increase the air pressure in the accumulator and thus increase the air pressure on the charged side of the corresponding pneumatic cylinder. In preferred embodiments, each inlet valve comprises two inlet valves of varying sizes. A larger inlet valve is selectively activated by a control system (described below) to increase the volume of air in the cylinder rapidly when the resistance level of a pneumatic cylinder is increased. A smaller inlet valve is selectively activated by the

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control system to increase the volume of air in the cylinder in finer increments when the control system is maintaining a selected resistance level. Of course, one skilled in the art will appreciate other embodiments can also be used to vary the resistance level.

A respective outlet valve (shown schematically in FIG. 5) for each accumulator is selectively opened to release air to the atmosphere in order to decrease the air pressure on the charged side of the cylinder. In the illustrated embodiment, the outlet valves for both pneumatic cylinders **82L**, **82R** are controlled by the left actuator button **66L** on the left handgrip **60L** when a user manually controls the resistance of the two pneumatic cylinders. The left actuator button **66L** is selectively activated by a user to actuate the outlet valves to reduce the air pressure to the lower chamber of each pneumatic cylinder **82L**, **82R**.

A user thus can adjust (e.g., increase or decrease) the air pressure within each resistance assembly by operating the appropriate valves using the right actuator button **66R** and the left actuator button **66L**. In alternative embodiments (not shown), the user can adjust the air pressure using control switches actuated in other ways (e.g., using foot pedals or the like).

Although the right actuator button **66R** and the left actuator button **66L** could be connected directly to the inlet valves and the outlet valves respectively, in the illustrated embodiment it is preferably that the pressure in the left pneumatic cylinder **82L** and the pressure in the right pneumatic cylinder **82R** be substantially equal so that the resistance applied to the left handgrip **60L** and the resistance applied to the right handgrip **60R** are substantially equal. In the illustrated embodiment, this is accomplished by providing a respective actuator signal from each actuator button **66R**, **66L** to a control system **200** (illustrated in block diagrams in FIG. 5 and FIG. 6) that is located within the control unit enclosure **100**. Although represented as a single control system, in the preferred embodiment, the control system **200** comprises a plurality of microprocessors programmed to perform specific functions, such as real-time measurement and adjustment of air pressures, real-time measurement of positions and computation of velocities, communicating with the user via the display panel, and the like.

In a simplified embodiment illustrated in FIG. 5, the control system **200** receives the respective actuator signals and determines whether the user is requesting a pressure increase or a pressure decrease. The control system **200** outputs control signals to a left inlet valve **210L** and to a right inlet valve **210R** to selectively couple the left accumulator **90L**, the right accumulator **90R** or both accumulators to a compressed air source **212** to selectively increase the air pressure in one or both accumulators **90L**, **90R** and the corresponding pneumatic cylinders **82L**, **82R**. As discussed above, each inlet valve **210L**, **210R** advantageously comprises a pair of inlet valves. In particular, a large inlet valve in a pair is selectively operated to provide coarse adjustment of the air pressure in the respective pneumatic cylinder. A small inlet valve in a pair is selectively operated to provide fine adjustment of the air pressure in the respective pneumatic cylinder.

The control system **200** outputs control signals to a left outlet valve **214L** and to a right outlet valve **214R** to selectively release air from one or both accumulators **90L**, **90R** to selectively decrease the air pressure in the respective pneumatic cylinders **82L**, **82R**. The inlet valves and the outlet valves are selectively controlled to achieve the desired pressure change while maintaining substantially equal resistances provided by the two pneumatic cylinders **82L**, **82R**. The control system **200** accomplishes this by receiving a feedback

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signal from a left pressure transducer **220L** coupled to the left pneumatic cylinder **82L** and by receiving a feedback signal from a right pressure transducer **220R** coupled to the right pneumatic cylinder **82R**. The control system **200** samples the feedback signals periodically (e.g., at a sample rate of 10 times per second in one embodiment and at a sample rate of 50 times per second in another embodiment having proportional valves) to determine the gage pressures measured in the cylinders. The gage pressure is added to the ambient barometric pressure that is also periodically measured using a barometric pressure transducer **224** in order to determine the absolute pressure in each cylinder. The absolute pressure in each cylinder is compared to a calculated desired absolute pressure, and the control system **200** then adjusts the control signals applied to the inlet valves and outlet valves accordingly to achieve the desired absolute pressure. In alternative embodiments, the barometric pressure transducer **224** is not included, and the barometric pressure is estimated from an altitude setting provided as an input to the control system **200**.

FIG. 6 illustrates a block diagram of a preferred embodiment of the system in which the control system **200** controls a different configuration for the control valves. Many elements of the block diagram in FIG. 6 are similar to corresponding elements of the block diagram in FIG. 5 and are numbered accordingly. The following description is directed to the elements of the block diagram of FIG. 6 that are not in FIG. 5.

In FIG. 6, a first left control valve **610L** has a first port **612L** coupled to the compressed air source **212**. The first left control valve **610L** has a second port **614L** coupled to the atmosphere. The first left control valve **610L** has a third port **616L** coupled to a left common galley **620L**. The first left control valve **610L** is controlled by the control system **200** to be in one of two modes. In a first mode, the first port **612L** is coupled to the third port **616L** so that the left common galley **620L** is coupled to the compressed air source **212**. In the second mode, the second port **614L** is coupled to the third port **616L** so that the left common galley **620L** is coupled to the atmosphere.

The left common galley **620L** is coupled to a first port **632L** of second left control valve **630L** and to a first port **642L** of a third left control valve **640L**. A second port **634L** of the second left control valve **630L** is coupled to the left accumulator **90L** and to the left pressure transducer **220L** via a pneumatic tube **636L**. A second port **644L** of the third left control valve **640L** is coupled to the pneumatic tube **636L** via an adjustable orifice **646L**. Although shown as a separate element, the adjustable orifice **646L** may advantageously be included as part of the third control valve **640L**.

The second left control valve **630L** and the third left control valve **640L** are controlled by the control system **200**. The second left control valve **630L** operates as a high flow valve. The control system **200** activates the second left control valve **630L** to make course adjustments to the volume of air in the accumulator **90L** and the pneumatic cylinder **82L**. The third left control valve **640L** operates as a low flow valve. The control system **200** activates the second left control valve **630L** to make fine adjustments to the volume of air in the accumulator **90L** and the pneumatic cylinder **82L** in accordance with the flow rate determined by the adjustable orifice **640L**.

The control system **200** operates the first left control valve **610L** in combination with the second left control valve **630L** and the third left control valve **640L**. The mode of the first left control valve **610L** determines whether the volume of air in the left accumulator **90L** and the left pneumatic cylinder **82L** is being increased or decreased and the selective activation of

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the second left control valve **630L** or the third left control valve **640L** determines a rate at which the increase or decrease in volume occurs.

Similarly, a first right control valve **610R** has a first port **612R** coupled to the compressed air source **212**, a second port **614R** coupled to the atmosphere, and a third port **616R** coupled to a right common galley **620R**. The first right control valve **610R** is controlled by the control system **200** to be in one of two modes as described above for the first left control valve **610L**.

The volume of air in the right accumulator **90R** and the right pneumatic cylinder are controlled by a second right control valve **630R** having a first port **632R** and a second port **634R** and third right control valve **642R** having a first port **642R**, a second port **644R** and an adjustable orifice **646R**. The right accumulator **90R** and the right pressure transducer **220R** are coupled to the second port **634R** of the second right control valve **630R** and to the adjustable orifice **646R** by a pneumatic tube **636R**.

The second right control valve **630R** and the third right control valve **640R** are controlled by the control system **200** in combination with the first right control valve **610R** to make course adjustments and fine adjustments to the volume of air in the accumulator **90R** and the pneumatic cylinder **82R** as discussed above for the corresponding left components.

The control system **200** uses the pressure measurements to calculate the resistive force that will be perceived by a user when the handgrips are moved. The calculated resistive force is advantageously displayed as the resistance on the RESISTANCE indicator **120** of the display unit **110** so that a seated user can readily observe the resistance selected by using the left actuator button **66L** and the right actuator button **66R**. As discussed above, the resistance is displayed as the force (preferably in pounds or kilograms) required to move the handgrips **60L**, **60R** and is calibrated to be equivalent to the force required to move a corresponding stack of conventional weights.

Once the pressures in the pneumatic cylinders are established by the control system **200**, the user can apply force to the left handgrip **60L** and apply force to the right handgrip **60R** to move the handgrips forward. The forward movement of the handgrips is coupled via the pivoting action of the left lever **40L** and the right lever **40R** about the left hinge **32L** and the right hinge **32R** to cause the left connecting rod **80L** and the right connecting rod **80R** to move within the left pneumatic cylinder **82L** and the right pneumatic cylinder **82R**. As discussed in U.S. Pat. No. 4,257,593, incorporated by reference herein, the air within the pneumatic cylinders **82L**, **82R** and the accumulators **90L**, **90R** is compressed as the pistons move within the cylinders. The force required to compress the air is coupled through the levers to oppose the movement of the handgrips to provide the user with the effect of lifting weights against gravity but without the inertial effects of conventional weights. It will be appreciated that as the pistons move farther into the respective cylinders, the force required to further compress the air increases; however, the shapes of the upper lever portions **44L**, **44R** are selected such that the user is provided with increasingly more leverage to compensate for the increased air pressure. Thus, the user pushes against substantially the same force throughout each exercise stroke. The shapes of the upper lever portions and parameters of other elements can be modified in alternative embodiments to adjust the shape of the force curve in each stroke for specific applications.

In addition to the mechanical control of the force provided by the shapes of the upper lever portions **44L**, **44R**, the force is also controlled by the control system **200**, which continues

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to sample the pressure transducers (e.g., at 10 times or 50 times per second) throughout each exercise stroke and selectively applies control signals to the inlet valves and the outlet valves to maintain the correct pressure in each pneumatic cylinder throughout the exercise stroke. Since the pressure is intended to vary throughout the exercise stroke, the control system **200** must also determine the position of each cylinder throughout the stroke. This is accomplished in the preferred embodiment by precisely measuring the position of each cylinder. In particular, the position of the piston within the left pneumatic cylinder **82L** is determined by a left position transducer **230L**, and the position of the piston within the right pneumatic cylinder **82R** is determined by a right position transducer **230R**. In the illustrated embodiment, each of the position transducers **230L**, **230R** is implemented by a resistive position transducer having a resolution of 1 part in 16,000,000 and having a linearity of better than 1 percent. Each position transducer **230L**, **230R** is sampled 400 times per second to determine the instantaneous position of the piston.

The control system **200** uses the measured positions of each piston to determine the instantaneous volume of the air in each cylinder. The control system **200** uses the measured barometric pressure and the measured pressures in each cylinder as inputs and solves the universal gas law equation ten times per second (or fifty times per second in an alternative embodiment having proportional valves) to determine whether to add or remove air from each cylinder to maintain the desired resistance at each position in the exercise stroke. The control system **200** also measures the supply pressure provided by the compressor (not shown) via a storage accumulator (not shown) to determine the amount of time to open a respective air inlet valve in order to add the proper amount of air to a cylinder.

As further illustrated in phantom in FIGS. **5** and **6**, the control system **200** for certain embodiments of the exercise apparatus **10** is selectively coupled via the communications cable **102** and the adapter **104** to an external computer system **250**. The computer system **250** is not utilized in connection with the embodiment described herein and is not discussed in further detail.

The apparatus **10** is used for exercising the muscles to increase the performance of the muscles. Although the apparatus **10** can be advantageously used as an exercise device by simply setting the resistance and then moving the handles as if the handles were coupled to conventional iron weights, a unique benefit of the apparatus **10** is not achieved in that manner. Rather, when the apparatus **10** is utilized in accordance with the system and method described below, a user is enabled to consistently exercise at a resistance level selected to develop the user's power. One aspect of the embodiments described herein is the use of the data key **162** and the data port recess **160** to control the display unit **110** to provide information to the user and to set parameters of the apparatus **10**.

In accordance with one aspect of the particular embodiment described herein, the data key **162** is an electronic replacement for a hand written exercise card. Each user is advantageously provided with a data key **162** into which workout data is stored, as described below. The data key **162** is carried by the user, and is inserted into the data port recess **160** of the display unit **110** of an apparatus **10** that the user wants to operate. In preferred embodiments, the data key **162** stores settings for up to 24 separate machine models and for up to 240 separate workout sets for the user. As discussed in more detail below, the integrated circuit **164** in the data key **162** includes an electronic memory chip. The data key **162**

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also includes a battery (not shown). The battery life is designed to be at least 10 years under normal operating conditions. Up to four adjustment machine settings may be stored for each machine model number depending on the adjustments available for a particular model. For example, the data key **162** stores the seat position and the arm position for the chest press apparatus **10** described herein. For other exercise apparatuses, the data key **162** advantageously stores the position of a chest pad for a seated rowing machine, the position of a pressure pad on a leg curl machine, the angle of an inclined support on a leg press machine, and the like, depending on the needs of the particular model. As discussed above, not all models use all four available settings. The features of the display unit **110** may vary in alternative embodiments.

For each workout, the data key **162** stores the time and date of the workout at each machine, the resistance used during the workout, the number of repetitions during each set, and the version and serial number of the software in the machine being used for a particular workout. The data key **162** also stores data related to a power test if the user selects the power test mode (described below).

As discussed above, the apparatus **10** can be used as an exercise device only. In particular, the electronic display **110** provides digital indications of the resistance value and the repetition count when a user operates the apparatus **10** without inserting a data key **162** into the data port **160**. The software in the control system **200** advantageously calculates the peak power produced on each repetition and displays the peak power as the current power on the current power indicator **126**. The software also maintains a record of the highest peak power achieved during any repetition and displays that value on the peak power indicator **128**.

The embodiment described herein provides additional functionality when a user inserts a data key **162** into the data port **160**. When the data key **162** is inserted, certain indicators provide additional information to the user that automatically keeps track of the parameters of the exercise routine (e.g., the adjustment settings for a particular machine), thus relieving the user of a burden of maintaining a handwritten exercise card. In addition, the display unit **110** is responsive to the presence of the data key **162** to selectively enable a test mode that is particularly advantageous for assisting a user training to achieve increased power.

As discussed above, the repetitions indicator **122** generally displays the current repetition count. However, when the data key **162** is inserted into the data port recess **160**, the repetitions indicator **122** displays the current set for a selected time interval following the insertion. The set count ranges from 1 to 9 and is signaled by the appearance of 3 horizontal bars in the left digit position instead of a number. The number of sets is defined as the number of sets of exercises that have been performed by the same user on the same machine in a four-hour period. If four hours have passed since the user completed the previous workout at the same machine, the control system **200** assumes that the user is returning for a new visit.

After displaying the set count for a few seconds, the repetitions indicator **122** displays the repetition count for the current set. The repetition count advantageously ranges from 0 to 99 in the illustrated embodiment. The repetition count may be reset by momentarily depressing both the increase actuator button and the decrease actuator button (e.g., the left actuator button **66L** and the right actuator button **66R** in the described embodiment or the foot pedals (not shown) in an alternative embodiment).

As discussed below, the repetitions indicator also provides a further function when the display unit **110** and the control

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system **200** are enabled to perform a power test in accordance with embodiments of the present application.

The test mode indicator **124** displays the number of repetitions that were performed on the corresponding set of the previous visit if that set was a normal workout set when a chip is inserted. If the corresponding set of the previous visit was a power test (described below), the test mode indicator **124** displays the characters Pr. If the user enables the display **110** and the control system **200** to operate in the test mode, as described below, the test mode indicator **124** displays the characters P1 during the high velocity portion of the test and displays the characters P2 during the high resistance portion of the test.

The current power indicator **126** displays 4 different values in accordance to the state of the control system **200**. During a conventional exercise set, the current power indicator **126** displays the peak power that has been achieved for the most recent repetition. At the end of a power test (described below), the current power indicator **126** displays the resistance that the user should select in order to achieve maximum power.

When a user inserts the data key **162** into the data port recess **160** of the display unit **110** of the apparatus **10**, the control system **200** evaluates the data stored in the data key **162** for the particular apparatus **10**. If the stored data indicates that the previous set by that user on that particular apparatus was a normal workout set (e.g., the test mode indicator **124** displays the number of repetitions), the current power indicator **126** temporarily displays the resistance that was used for the previous corresponding set. The user can then activate the appropriate actuator buttons to adjust the resistance level to the previous workout level. In contrast, if the data stored in the data key **162** for that particular apparatus indicates that the previous set for the user on that apparatus was a power test (e.g., the test mode indicator **124** initially displays the characters Pr, as discussed above), the current power indicator **126** displays the resistance to use to achieve maximum power, as determined during the previous power test. When the calculated resistance to achieve maximum power is being displayed, the current power indicator **126** flashes to indicate to the user that the resistance rather than the power is being displayed.

In summary, during an exercise set, the current power indicator **126** displays the power for the current repetition; at the end of a power test the current power indicator **126** displays the resistance to use for training at maximum power; and when a data key **162** is inserted into the data port recess **160**, the current power indicator **126** displays the resistance that the user should set into the resistance indicator **120** before beginning the exercise.

As discussed above, the peak power indicator **128** displays the highest power that has occurred during the current workout session or since the data saved in the user's data key **162** was last reset.

As discussed above, the machine adjustment indicators **130**, **132**, **134**, **136** display from one to four machine adjustments depending upon the model of exercise apparatus being used. The first time a user works out on a particular machine, the user adjusts the machine (e.g., the seat height and the arm position in the illustrated embodiment) and enters the selected positions in the respective adjustment indicator by pressing the arrows located directly above or below each indicator. For example, the user can increase the value displayed by the first adjustment indicator by pressing the up arrow **130U** and can decrease the value by pressing the down arrow **130D**. Preferably, the adjustments may only be changed in a time window starting immediately after the data key **162** is inserted and ending before the user begins a third

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repetition. Once three repetitions are performed in a current workout session, the machine adjustments cannot be changed until the data key **162** has been removed and reinserted. Machine adjustments apply to a machine and cannot be changed from set to set. The adjustments for a particular machine are saved on the user's data key **162**. Thus, when the user returns to the same machine and inserts the data key **162** in the data port recess **160**, the previously stored adjustment data values for that machine are displayed to remind the user of the settings. Thus, the user is able to quickly adjust the machine to the appropriate settings without having to refer to a handwritten exercise card.

In the embodiment described above, the results of the power testing are displayed on the user display **110**. In alternative embodiments, the results are not displayed on the user display **110**. Rather, the results are transferred to the external computer system **250** only.

As briefly discussed above, one particularly advantageous use for the embodiment described herein is to perform a power test to determine a user's maximum power for the muscle groups that are exercised by a particular machine and to determine the resistance at which the maximum power is achieved. With this information, a user is able to consistently exercise the muscle groups at the optimal resistance for achieving the maximum power and to strive to increase the maximum power produced by the muscle groups.

One embodiment of the power test is illustrated by the flow chart in FIGS. 7-11. As illustrated in FIG. 7, the test comprises a start sequence **1010**. The start sequence **1010** is followed by a first test sequence **1020**, which is performed at a very low resistance. The first test sequence **1020** is followed by a second test sequence **1030**, which is performed at a high resistance. Preferably, the high resistance is selected to be near a maximum resistance for the user for the particular apparatus **10**. For both test sequences, the user is encouraged to perform each repetition against the resistance as fast as the user can in order to achieve the maximum velocity since a higher velocity at a given resistance results in higher power. The second test sequence **1030** is followed by an action block **1040** in which the values from the first test sequence **1020** and the second test sequence **1030** are used to calculate an optimum resistance value for the user to set for the particular apparatus in order to provide optimum power training.

As illustrated in more detail in FIG. 8, within the start sequence **1010**, the user pushes both actuator buttons **66L** and **66R** at the same time until the characters **6r** appear in the resistance indicator **120**, as illustrated by an action block **1050**. The user then releases both actuator buttons immediately in an action block **1052**. The resistance indicator **120** displays the characters CLER for a few seconds in an action block **1054**. Thereafter, the resistance indicator **120** again displays the characters **6r** in an action block **1056** to indicate that the control system **200** of the apparatus **10** is in the test mode. The control system **200** exits the test sequence **1010** via an exit block **1058** to perform the actions of the first test sequence **1020** illustrated in FIG. 9.

As shown in FIG. 9, in the first test sequence **1060**, the control system **200** first performs the actions in block **1060**. In particular, the control system **200** displays the characters P1 in the test mode indicator **124** and waits until the user selects an initial resistance for the first test sequence. The user is instructed to select a very low resistance for the first test sequence in order to achieve a maximum velocity. For example, the resistance is advantageously selected to be a sufficiently low value that the resistance appears to be almost negligible to the user. This initial resistance value may be different for users at various levels of fitness.

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After the user selects the initial resistance, the control system **200** resets a repetition count to zero in an action block **1062**. The control system **200** sends commands to the display unit **110** to cause the display unit **110** to display the character **0** in the repetitions indicator **122**.

In an action block **1064**, the control system **200** monitors the transducers **230L**, **230R**, as the user pushes against the hand grips **60L** and **60R** to move the levers **40L** and **40R** against the selected resistance. In preferred embodiments, the control system **200** determines the maximum velocity achieved by the user during the repetition. Alternatively, the velocity can be determined at a particular location of the levers during the overall movement. In either case, the velocity is measured in a consistent manner so that the velocities can be used for the calculations described below. In certain implementations of the control system **200**, the control system **200** also calculates the maximum power produced by the user during the repetition based on the resistance level and the maximum velocity. As discussed below, the maximum power can be displayed to encourage the user to move the levers at a greater velocity.

After the user performs the first repetition, the control system **200** increments the repetition count in the repetitions indicator **122** from 0 to 1 in an action block **1066**. Then in a decision block **1068**, the control system **200** determines whether the repetition count is equal to 1 or 2. If the repetition count is not 1 or 2 (e.g., the repetition count is 3), the control system **200** saves the maximum velocity achieved and the resistance level at which the maximum velocity was achieved and exits the first test sequence via an exit block **1070**.

If the repetition count evaluated in the decision block **1068** is 1 or 2, the control system **200** proceeds to a decision block **1072** and waits until the user adjusts the resistance level or moves the handgrips to initiate the second repetition. As discussed above, the maximum power achieved during a repetition is advantageously calculated in certain embodiments and displayed to the user to enable the user to adjust the resistance level to a different value in order to endeavor to increase the maximum power produced during the first test sequence. For example, the user may want to increase the resistance if the user thinks he or she may be able to achieve approximately the same maximum speed at a higher resistance and thus increase the maximum power achieved. On the other hand, the user may reduce the resistance if the user thinks he or she may be able to increase a higher maximum speed at a lower resistance. If the user changes the resistance level before moving the handles, the control system **200** exits the decision block **1072** and returns to the action block **1062** where the control system **200** resets the repetition count to zero before entering the action block **1064** to monitor the velocity. If the user does not change the resistance level, the control system **200** returns directly to the action block **1064** without resetting the repetition count.

From the foregoing, it can be seen that the user is provided the opportunity to adjust the resistance level after either the first repetition or the second repetition. If the user adjusts the resistance level after either the first repetition or the second repetition, the repetition count is reset to zero so that the user must perform three repetitions at the same resistance level before the control system **200** exits the first test sequence **1020** and proceeds to the second test sequence **1030** described below.

As discussed above, in certain embodiments, the maximum power achieved in a repetition is advantageously calculated from the maximum velocity and the resistance level. The current power indicator **126** advantageously displays the power generated in the current repetition, and the peak power

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indicator **128** displays the maximum power generated in the three repetitions. For example, the peak power indicator **128** is updated if the maximum power generated during the second repetition exceeds the maximum power generated during the first repetition. Similarly, the peak power indicator **128** is updated if the maximum power generated during the third repetition exceeds the previously recorded peak power from the first repetition and the second repetition. In such embodiments, the user is instructed to attempt to exceed the previously recorded peak power on each of the second and the third repetitions. Thus, for example, if the power achieved during the second repetition does not match or exceed the power achieved during the first repetition, the user may want to decrease the resistance to achieve a higher velocity or may want to increase the resistance if the user thinks the same velocity can be achieved at a higher resistance.

In the preferred embodiment described herein, the recorded maximum velocity is reset if the user changes the resistance level after the first repetition or the second repetition so that when the control system **200** exits the first test sequence **1020**, the maximum velocity and the resistance level at which the user performed three repetitions are saved to be used to determine the optimum training resistance level, as described below.

As illustrated in FIG. **10**, in the second test sequence **1030**, the control system **200** performs actions similar to the actions performed in the first test sequence. In particular, in an action block **1060**, the control system **200** displays the characters **P2** in the test mode indicator **124** and waits until the user has adjusted the resistance value to an initial value. The value is selected to be just below the maximum resistance for the user of the particular apparatus **10**. The maximum value may be known from previous workouts, or it may be determined by other evaluation systems, such as, for example, the system described in Applicant's copending U.S. patent application Ser. No. 10/694,198, filed on Oct. 27, 2003, which is incorporated by reference herein. In one example, the user is instructed to enter a resistance value at approximately 80% of the user's maximum value.

After selecting the initial resistance level, the control system **200** resets the repetition count to zero in a block **1082** and then advances to a block **1084** to monitor the movement of the levers **40L** and **40R** and gather the velocity data, as discussed above. After a repetition is completed, the control system **200** increments the repetition count in an action block **1086**. Then, in a decision block **1088**, the control system **200** determines whether the repetition count is 1 or 2. If the repetition count is 3 or more, the control system **200** exits the second test sequence via an exit block **1090**.

If the repetition count is 1 or 2, the user is again provided the opportunity to change the resistance value as represented by a decision block **1090**. If the user changes the resistance value before moving the hand grips, the control system **200** returns to the action block **1082** and resets the repetition count to zero. If the user moves the hand grips without changing the resistance level, the control system **200** returns to the action block **1084** without resetting the repetition count.

In accordance with the foregoing actions, the control system **200** enables the user to try one or two repetitions at various resistance levels so that the user can endeavor to identify the resistance level that provides the combination of resistance and velocity that produces the greatest power. As long as the user does not perform a third repetition without changing the resistance level, the control system **200** does not exit the second test sequence **1030**. When the user performs three repetitions in a row without changing the resistance level, the control system **200** saves the resistance level and the

maximum velocity from the three repetitions and then exits the second test sequence **1030** via the exit block **1090** and proceeds to the action block **1040** shown in FIG. **11**.

As illustrated in FIG. **11**, in the action block **1040**, the control system **200** calculates an optimum resistance level in an action block **1200**. In particular, the optimum resistance level is calculated in the block **1200** in accordance with the procedure graphically illustrated in FIG. **12**. In particular, FIG. **12** illustrates the steps for determining the overall maximum power for a user and for determining the optimum resistance level to use to achieve the overall maximum power.

Applicant has discovered that the relationship between velocity and resistance is generally linear over a wide range of resistance levels from low resistance levels to high resistance levels. The magnitudes of the “low resistance levels” and the “high resistance levels” differ in accordance with the type of exercise equipment being used and in accordance with the fitness of a user. For example, the range of resistance levels in a leg press machine will be substantially larger than the range of resistance values for the chest press apparatus **10** described herein. For the purposes of the following discussion, a range in resistance levels from 10 pounds to approximately 190 pounds is assumed for a user being tested in accordance with the above-described method. The resistance levels shown in FIG. **12** are the combined resistances for the two levers **40L**, **40R** being moved at the same time by both arms of a user.

In FIG. **12**, the data gathered in the block **1064** during the first test sequence (FIG. **9**) and the data gathered in the block **1084** during the second test sequence (FIG. **10**) are used to generate a graph of power versus the resistance level. In the illustrated example, during the first test sequence (FIG. **9**), a user being tested is able to move the levers **40L**, **40R** (e.g., the engagement assembly) against a first resistance level (**R1**) of 10 pounds at a first maximum velocity (**V1**) of approximately 100 inches/second. During the second test sequence (FIG. **10**), the same user is able to move the engagement assembly against a second resistance level (**R2**) of 180 pounds at a second maximum velocity (**V2**) of approximately 25 inches per second.

For the purposes of determining the resistance level at which the user generates the maximum velocity, a linear relationship between the resistance levels and the maximum velocities is assumed, as represented by the straight line **1250** drawn between the two end points (**R1**, **V1**; and **R2**, **V2**) in FIG. **12**. It should be understood that the relationship between the velocity and the resistance level will vary from user to user. Thus, the end points of the straight line **1250** and the slope of the straight line **1250** will vary from user to user.

The linear relationship between the maximum velocity and the resistance level allows the maximum velocity to be determined for the resistance levels between the two end points. The maximum velocity at each resistance level is multiplied by the resistance level to obtain the power (e.g., power=force times velocity). The power is represented by the curved graph **1260** in FIG. **12** extending from a first maximum power (**P1**) at the first resistance level (**R1**) to a second maximum power (**P2**) at the second resistance level (**R2**). The overall maximum power generated by the user being tested is determined as the maximum point (**P3**) on the power graph **1260** (e.g., approximately 698 watts at an optimum resistance level (**R3**) of approximately 118 pounds and a corresponding velocity (**V3**) of approximately 52 inches/sec. It can be seen from the graph that training at a greater resistance level than the optimum resistance level (**R3**) further reduces the maximum velocity such that the generated power is reduced below the

overall maximum power (**P3**). Training at a lower resistance level to increase the velocity also reduces the generated power.

In certain embodiments, the graphing steps described above are performed to generate a visual indication of the foregoing information. In preferred embodiments, the graphing step is not performed. Rather, the control system **200** determines the maximum power from the calculated values in a conventional manner. In particular, the straight line **1250** can be extended mathematically to the right in FIG. **12** to intersect the horizontal axis at zero velocity. The resistance level at the intersection is the maximum resistance level. Ideally, because of the approximately linear relationship between the velocity and the resistance level, the optimum resistance level at which maximum power is achieved for a particular user is approximately equal to 50 percent of the maximum resistance level.

After calculating the optimum resistance level in the block **1200**, the control system **200** advances to an action block **1210**, wherein the control system **200** sends commands to the display unit **110** to cause the current power indicator **126** to flash with the calculated optimum resistance value. If the user inserted the user's data key **162** in the data port recess **160** prior to initiating the test mode, the optimum resistance level is stored in the data key **162** in association with the particular apparatus **10**. Thereafter, when the user returns to the particular apparatus **10** and inserts the data key **162**, the control system **200** flashes the stored optimum value for the resistance level in the current power indicator **126**, as discussed above, so that the user can readily enter the optimum resistance value into the resistance indicator **120** before beginning a workout session.

The control system **200** also utilizes the resistance indicator **120** to provide error messages to the user. For example, if the user does not select the low resistance for the first test sequence and the maximum resistance for the second test sequence at appropriate levels such that the difference between the resistance levels is too small, the control system **200** causes the display unit **110** to flash the characters **Er1**, **Er2**, **Er3** or **Er4** in the resistance indicator **120**.

If a user decides to abandon the power test without completing one or both test sequences, the user may exit the test mode by removing the data key **162** if the user inserted the data key **162** in the data port recess **160** prior to starting the test mode. If the user started the test mode without a data key **162** in the data port recess **160**, the user may exit the test mode by pressing both actuator buttons **66L** and **66R** at the same time for the apparatus **10** or corresponding actuator switches for other exercise devices.

As discussed above, if a user inserts a data key **162** into the data port recess **160** at the beginning of a power test, the optimum resistance level and maximum power are saved. The user can retrieve the saved data during a subsequent workout session. The user may also perform the above-described power test on a periodic basis to determine whether the training at the optimum resistance has had the desired effect of increasing the user's power generation. Thus, for example, a subsequent test may advantageously show that the user's maximum power generation has increased. In some cases, the maximum power may occur at a different optimum resistance level. By displaying the revised optimum resistance level to the user, the user is able to change the resistance level in order to continue training for maximum power generation.

As discussed above, each control system **200** is programmed to work with a specific model of exercise machine so that the measurement of velocity and the calculations of power correspond to the configuration of a particular exercise

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machine. In addition, the control system **200** is programmable with the approximate elevation of the location where a particular machine is installed so that the approximate barometric pressure can be determined for use in determining the resistance provided by the pneumatic cylinders so that the pressure transducer **224** (FIGS. **5** and **6**) is not needed to determine barometric pressure in certain embodiments. Preferably, the approximate elevation of the location is programmed during initial installation and during system maintenance as needed via setting devices located on a circuit board for the control system. Generally, the elevation setting and other system settings are not accessible by the user during normal operations. The control system **200** also records the current resting position of the resistance cylinders as the zero point of the cylinders for use in calculations during the operation of the exercise apparatus **10**. In alternative embodiments, the zero point of the cylinders is set using the external computer system **250**.

It should be understood that the foregoing description of a chest press apparatus is only one example of a measurement apparatus that can implement the system and method in accordance with aspects of the present invention. For example, one skilled in the art will appreciate that the foregoing features can be advantageously incorporated into a leg conditioning apparatus to enable the power of the legs to be measured to determine the velocity and resistance level where a subject develops the maximum power. After determining the velocity and resistance level for maximum power, a suitable conditioning program can be developed to increase the velocity and the strength to achieve a desired result. One skilled in the art will also appreciate that the methods described herein can advantageously be implemented on other exercise and testing devices having the capability of measuring velocities achieved by a user at adjustable resistance levels.

Although described above with respect to athletic ability, it should be understood that the apparatus and method in accordance with aspects of the embodiments of the present invention can be advantageously used in other environments. For example, one problem encountered by a significant portion of an aging population is loss of strength and mobility. Failure to develop and maintain an adequate physical condition while younger becomes a far greater problem as the muscles deteriorate and weaken. It has been shown that strengthening exercises are beneficial to the overall health of an aging individual. However, as discussed above, measurement of strength alone is not sufficient in most cases to properly determine a person's physical ability. The above-described apparatus and method can be advantageously used to determine the resistance level and velocity where a person has the greatest power. A conditioning program can then be developed to improve the person's overall power rather than simply increasing strength or increasing speed. More particularly, by starting where the person has the most power, the conditioning program can start at a force and velocity where the person is most likely to be able to complete an exercise routine such that the person will also develop the confidence required to continue with the conditioning program. Other low-inertia exercise apparatuses that can be automatically controlled to selectively increment the resistance between each successive exercise stroke can also be advantageously used. For example, apparatuses using electromagnetic resistance devices, apparatuses using hydraulic resistance devices, or the like, may be used.

The invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all

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respects only as illustrative and not restrictive. The scope of the invention is therefore indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within that scope.

What is claimed is:

1. A method for selecting a resistance level to use to train a muscle group for maximum power generation on an exercise apparatus having a controller, an engagement assembly movable against a resistance element by the muscle group of a user and having a monitoring system that measures a velocity of movement of the engagement assembly, the method comprising:

providing a controller;

adjusting the resistance element via the controller to a first resistance level (**R1**), the first resistance level (**R1**) selected to be a low level;

monitoring the movement of the engagement assembly against the first resistance level (**R1**) to determine a first velocity (**V1**) of movement of the engagement assembly;

adjusting the resistance element via the controller to a second resistance level (**R2**) different from the first resistance level (**R1**);

monitoring the movement of the engagement assembly against the second resistance level (**R2**) to determine a second velocity (**V2**) of movement of the engagement assembly;

using at least the equation $P=R \times V$ to determine a relationship between the resistance level and the velocity of movement of the engagement assembly based on the first and second resistance levels (**R1**, **R2**), the first and second velocities of movement (**V1**, **V2**), and a predetermined relationship between resistance levels and velocities, the determined relationship defining a plurality of power values (**P1**, **P2**, **P3**) including an overall maximum power (**P3**) generated by the user; and

using the determined relationship to determine a resistance level (**R3**) that corresponds to the overall maximum power (**P3**) as the resistance level to use for training the muscle group for maximum power.

2. The method as defined in claim **1**, wherein monitoring the movement of the engagement assembly against the first resistance level (**R1**) comprises monitoring a plurality of repetitions of the movement of the engagement assembly and selecting as the first velocity (**V1**) a maximum velocity achieved in the plurality of movements.

3. The method as defined in claim **2**, wherein the monitoring system monitors a maximum number of repetitions before selecting the first velocity (**V1**), and wherein adjusting the first resistance level (**R1**) of the resistance element to an adjusted first resistance level resets the repetitions such that the first velocity (**V1**) is selected only after the maximum number of repetitions are performed at the adjusted first resistance level.

4. The method as defined in claim **2**, wherein the monitoring system displays a number representing the power generated during each repetition to provide the user with an incentive to increase the power on a subsequent repetition.

5. The method as defined in claim **1**, wherein monitoring the movement of the engagement assembly against the second resistance level (**R2**) comprises monitoring a plurality of repetitions of the movement of the engagement assembly and selecting as the second velocity (**V2**) a maximum velocity achieved in the plurality of movements.

6. The method as defined in claim **5**, wherein the monitoring system monitors a maximum number of repetitions before

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selecting the second velocity (V2), and wherein adjusting the second resistance level (R2) of the resistance element to an adjusted second resistance level resets the repetitions such that the second velocity (V2) is selected only after the maximum number of repetitions are performed at the adjusted second resistance level.

7. The method as defined in claim 5, wherein the monitoring system displays a number representing the power generated during each repetition at the second resistance level (R2) to provide the user with an incentive to increase the power on a subsequent repetition.

8. The method as defined in claim 1 further comprising receiving a signal at the controller that is indicative of a position of an actuator button.

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9. The method as defined in claim 1 further comprising receiving a signal at the controller that is indicative of a position of a foot pedal.

10. The method as defined in claim 1, wherein the determined resistance level (R3) is different than the first and second resistance levels (R1, R2).

11. The method as defined in claim 1, wherein the determined resistance level (R3) is then displayed.

12. The method as defined in claim 1, wherein the predetermined relationship is a linear relationship.

13. The method as defined in claim 12, wherein the linear relationship between resistance levels (R) and velocities (V) is $V = ((V2 - V1) / (R2 - R1)) \times R + V1 - ((V2 - V1) / (R2 - R1)) \times R1$.

* * * * *

EXHIBIT 19

*Petition for Inter Partes Review
of U.S. Patent No. 10,953,268*

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

Tonal Systems, Inc.,
Petitioner,

v.

iFIT, Inc.,
Patent Owner.

Case No. IPR2022-00954

U.S. Patent No. 10,953,268
Issue Date: March 23, 2021

**PETITION FOR INTER PARTES REVIEW OF
U.S. PATENT NO. 10,953,268**

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*Petition for Inter Partes Review
of U.S. Patent No. 10,953,268*

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1001	U.S. Patent No. 10,953,268 (“268 patent”)
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1003	Declaration of Harvey C. Voris (“Voris Decl.”)
1004	Curriculum Vitae of Harvey C. Voris
1005	U.S. Patent App. Pub. No. 2009/0269728 A1 (“Verstegen”)
1006	U.S. Patent No. 7,955,235 B2 (“Keiser I”)
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1009	IDS excerpts U.S. Patent No. 10,279,212

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I. INTRODUCTION

The '268 patent is directed to exercise equipment, specifically, cable-strength training machines (“cable machines”). The purported invention reflected in claims 1, 4, 5, 7, 8, 15-18, 25, 27, 29, 48 and 59 (the “challenged claims”) is “a strength training apparatus that enables a variety of exercises while also providing the ability to track the work performed by an individual during their exercise session.” EX1001, 7:43-45. More specifically, the challenged claims are directed to a cable machine with adjustable arms and an electronic control panel that allows the user to adjust resistance and track progress. But neither of these claim elements were new, alone or in combination, before the March 14, 2013 priority date of the '268 patent. Thus, for the reasons described in detail below, Petitioner has shown that there is a reasonable likelihood that at least one challenged claim is obvious in view of the cited prior art and *inter partes* review should be instituted.

II. BACKGROUND TECHNOLOGY

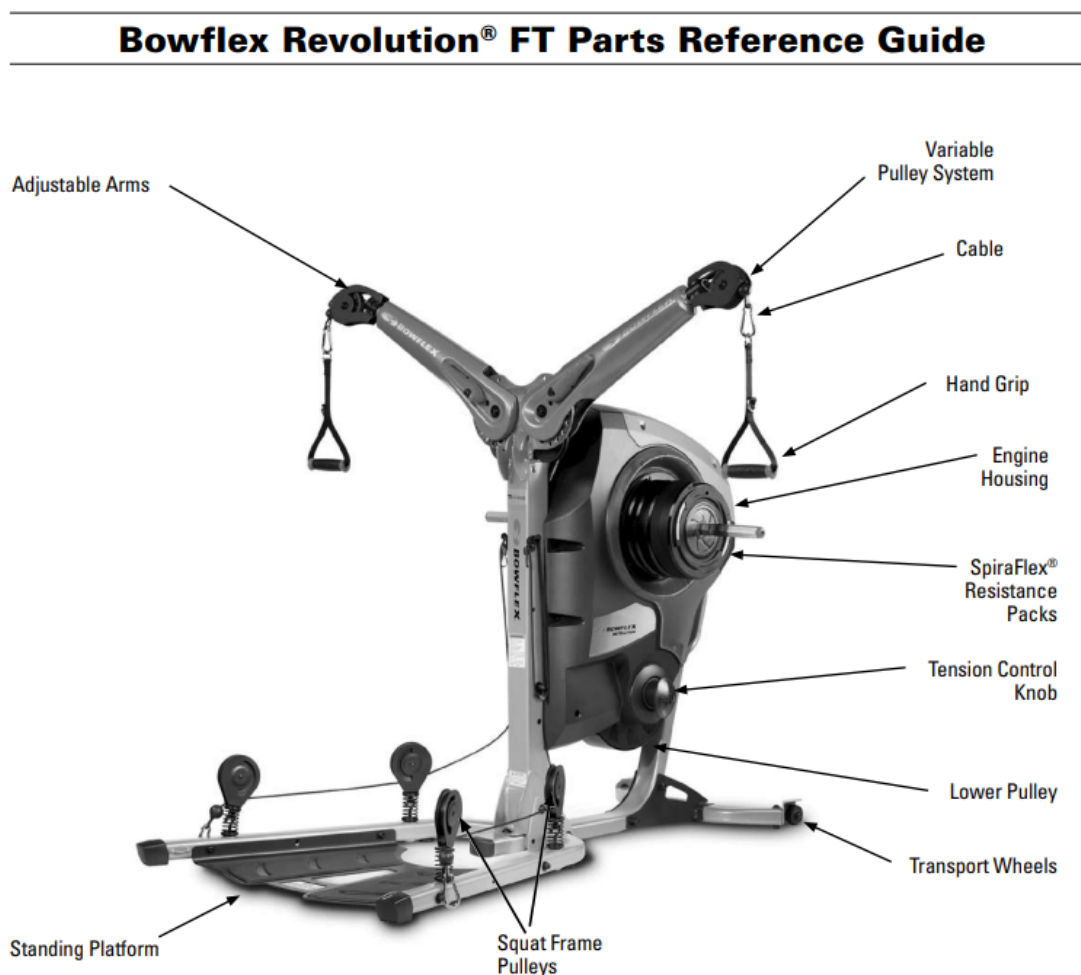
A. Cable Machines

Cable machines are devices that permit a user to perform strength training exercises by transmitting force to a cable that is connected to a resistance mechanism, often via pulleys. EX1003, ¶ 35. Jack Lalanne is credited with inventing the first modern cable machine in the early 1950's. *Id.* In the late 1950's, Harold Zinkin invented the Universal Gym, a fitness machine that

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incorporated cable weight stations and leverage lifting mechanisms. *Id.*, ¶ 36. The popularization of the Universal Gym led to a cable machine craze in the 1970's, and by the 2000's, cable machines were commonplace in gyms. *Id.*

One common design for a cable machine before March 2013 featured two cables routed through two adjustable arms via two pulleys at the end of each arm. *Id.*, ¶ 37. The Bowflex Revolution Home Gym that launched around 2000, for example, contained these features:



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Id. So did the Keiser Infinity Functional Trainer, which launched in the mid-2000's:



Id., ¶ 38. Other models that featured this design included the FreeMotion Dual Cable Cross and the Paramount PFT-200 Functional Trainer, both which launched prior to 2010. *Id.*, ¶¶ 39-40.

The dual cable arm design was popular because it was relatively compact and permitted a user to perform a wide variety of different exercises using a single device. *Id.*, ¶ 41. For example, a user could position both arms upward to pull the

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weight downward for exercises targeting the latissimus, both arms downward to pull the weight up for exercises targeting the biceps, or one arm downward to pull the weight across the body for exercises targeting the obliques. *Id.* The dual cable arm design was thus uniquely suitable for home gyms or any gym with space constraints, as it combined the functionality of many different types of strength training devices into one compact package. *Id.*, ¶ 42.

B. Electronic Resistance Controls

For a cable machine to function, resistance must be applied to the cable so that the user's muscles are actively engaged while pulling on the cable. EX1003, ¶ 43. To accommodate users at different levels of strength, and for different types of exercise, the resistance must generally be adjustable. *Id.* By 2013, cable machines employed a variety of different mechanisms to provide multiple levels of resistance. *Id.*, ¶ 44. One of the most common resistance mechanisms was an adjustable weight stack. *Id.*, ¶ 45. Other ways of providing adjustable resistance to the cable included using a magnetic brake, pneumatic pressure, hydraulic resistance, or resistance provided by motors or alternators. *Id.*, ¶ 44.

Cable machines that employed these resistance mechanisms could permit the user to adjust the desired resistance either manually, digitally, or both. *Id.*, ¶¶ 47-52. Cable machines that permitted a user to digitally adjust the resistance would often do so by way of an electronic control panel with an input device and a

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display, such as a tablet or touchpad, so that the user could both adjust the level of resistance and view it at the same time. *Id.*, ¶¶ 49-54. The 2009 model of the LifeCore LC-100 Rower, for example, permitted the user to adjust and view the machine's magnetic resistance using an electronic control panel:



Id., ¶ 51. Likewise, the 2012 model of the Weider Platinum Home Gym allowed a user to adjust and view the machine's tensile resistance using an electronic control panel:

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Id., ¶ 52. So did the Keiser Infinity Functional Trainer, for the device’s pneumatic resistance:

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Id., ¶ 53.

While electronic control panels are generally more expensive to implement than manual controls, electronic control panels that allow the user to adjust resistance were popular for many reasons. *Id.*, ¶¶ 55-58. First, adjusting the resistance with a touch of a button is intuitive to users and allows them to finely tune the resistance to a desired level. *Id.*, ¶ 58. For example, the Keiser Infinity

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Functional Trainer permitted a user to adjust the pneumatic resistance in tenth-of-a-pound increments:



Id., ¶ 59.

Second, electronic control panels can be placed in more convenient locations on the device so that the user can easily access the resistance settings and increase or decrease the resistance without interrupting an exercise. *Id.*, ¶ 60. For example,

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the Life Fitness Circuit System that launched in 1998 placed the electronic control panel immediately in front of the user:



Id.

Third, electronic control panels can also be easily configured to calculate and display metrics that users care about, such as the time spent performing an exercise, the number of calories burned, and/or the force or power exerted by a user during a particular pull on the cable. *Id.*, ¶¶ 61-64. For example, the Keiser

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Infinity Functional Trainer displayed the user's current and peak power while pulling on the cables, as well as the number of actual and target repetitions:



Id., ¶ 62.

Fourth, electronic control panels can be configured to entertain the user, by showing television programs, playing music, or engaging the user in a game. *Id.*, ¶ 65-66. For example, the 2011 version of the Precor P80 console allowed a user to watch television, follow instructional videos, or play music while working out:

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Id., ¶ 66.

Based on these benefits, by 2013 a number of fitness companies marketed exercise machines that included electronic control panels. *Id.*, ¶ 68.

C. Customized Workout Routines

In the fitness industry, there is high consumer demand for equipment that facilitates personalized workout routines that are tailored to the specific user and allow the user to track their progress. EX1003, ¶ 69. Based on this demand, for years prior to 2013, fitness companies designed equipment that offers customized workout routines, provides instruction to users on technique, and allows users to track their results, goals, and progress. *Id.*, ¶ 70. Many pre-2013 rowing machines, treadmills, and ellipticals would receive and store a distance, calorie, or heart rate goal for the user, track and display the achievements by a user during

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current and previous workouts, and notify the user when goals have been achieved.

Id. The Precor P80 console, for example, tracked and displayed the user's progress toward target distance, calorie, and heart rate goals:



Id., ¶ 72.

Pre-2013 cable machines also kept track of various metrics like the level of resistance, the number of repetitions, or the power expended by a user, and tracked the user's progress toward a corresponding fitness goal. *Id.*, ¶¶ 74-75. For

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example, the Keiser Infinity Functional Trainer kept track of the percent of peak power a user achieved during a particular repetition as well as progress toward a target for number of repetitions:



Id., ¶ 74.

As the photographs show, customized workout routines were often provided by electronic control panels, based on inputs from the user. *Id.*, ¶ 72-75. These

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electronic control panels necessarily include processors to carry out the desired functions and digital memories to store the information required to do so. *Id.*, ¶ 75.

III. THE '268 PATENT

A. Specification

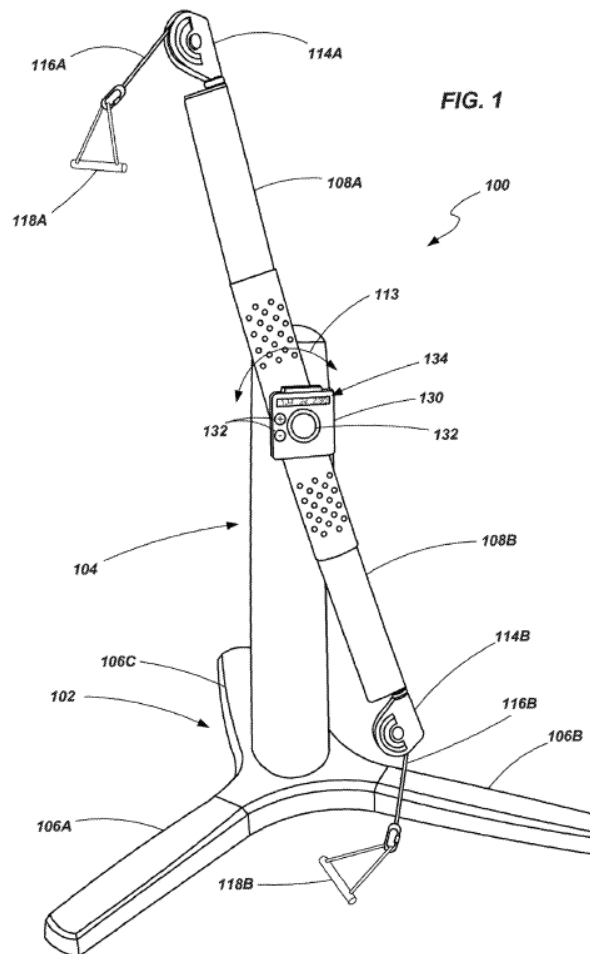
The '268 patent is titled “Strength Training Apparatus.” It issued on March 23, 2021, from a U.S. application filed on December 8, 2020, which claims priority to a provisional application filed on March 14, 2013.¹

The Background Technology discussed above was already known in the art, as the specification of the '268 patent acknowledges. Specifically, it acknowledges the following: (1) cable and pulley strength training equipment; (2) independently positionable arms; (3) electronic resistance mechanisms; (4) electronic systems that provide customized workouts for a user; and (5) electronic systems that store, display, and track progress toward a fitness goal of a user, were all known in the art. *See* EX1001, 1:49-53, 2:03-09, 5:45-50, 8:35-41, 9:52-62, 13:25-36; EX1003 ¶¶ 25-26.

¹ For the purposes of this proceeding, Petitioner assumes March 14, 2013 as the '268 patent's priority date. Petitioner reserves the right to contest this or any earlier priority date in this and in any related proceedings.

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The advantage of the purported invention is the **combination** of the independently positionable arms with the user's ability to fine-tune the resistance and track the work performed during the workout. EX1001, 7:31-8:13. This combination is reflected in the challenged claims, all of which have two main features: (1) a pair of independently positionable arms coupled to pulleys through which two cables extend; and (2) an electronic control panel that allows a user to view and adjust the level of resistance applied to the cables. *Id.*, 2:19-34.



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Id., Fig. 1. In certain claimed embodiments, the electronic control panel may also be configured to track and display certain performance metrics, or to customize a workout routine for the user based on the user's physical fitness goal. *Id.*, 8:03-34.

B. Prosecution History

The application that issued as the '268 patent was filed on December 8, 2020 with 68 claims, which were allowed on January 29, 2021 without amendment. Applicant did not disclose any of the prior art at issue in this Petition during prosecution of '268 patent, nor did the Examiner rely upon or discuss this prior art.²

IV. PERSON OF ORDINARY SKILL IN THE ART "POSA"

The subject matter of the '268 patent relates to strength training equipment. A POSA in this subject matter as of March 2013 would have at least a bachelor's degree (or equivalent) in electrical engineering, mechanical engineering, biomechanics, kinesiology, exercise science, or a related field, and at least two years of industry or equivalent research experience in the field of exercise equipment. EX1003, ¶ 30. This description is approximate, and a higher level of

² Applicant did submit IDSes listing Verstegen, Keiser I, Keiser II, and Lannon during prosecution of a related application, but these references were not discussed at all during prosecution. EX1009; *see also* EX 1001 (references cited).

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education or skill might make up for less experience, and vice versa. *Id.* This petition does not rely on this precise definition, and the challenged claims would be unpatentable from the perspective of any reasonable level of ordinary skill.

V. CLAIM CONSTRUCTION

Petitioner does not believe any claim terms require a specific construction. Throughout this petition, the plain and ordinary meaning of the claim terms is applied.³ *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005).

VI. IDENTIFICATION OF GROUNDS (37 C.F.R. §42.104(B))

Ground 1: Claims 1 and 25 are unpatentable under § 103 over Verstegen (EX1005) in view of Keiser I (EX1006) and Keiser II (EX1007).

Ground 2: Claims 4, 5, 7, 8, 15-18, 27, 29, 48 and 59 are unpatentable under §103 over Verstegen in view of Keiser I and Keiser II and in further view of Lannon (EX1008).

³ Petitioner reserves the right to argue alternative constructions in other proceedings, including that the claims are indefinite.

VII. OVERVIEW OF PRIOR ART

A. U.S. Patent App. Pub. No. 2009/0269728 A1 (“Verstegen”)

Verstegen was filed on April 29, 2008 and published on October 29, 2009.

Verstegen is therefore prior art to the '268 patent under § 102 (a) and (b).

Verstegen is assigned to Athletes' Performance, Incorporated.

Verstegen describes a system for exercise machines that employs a software program that generates a customized workout routine based on the user's physical condition and fitness goals. EX1005, Abstract, ¶¶ 8, 24, 28; EX1003 ¶¶ 76-80.

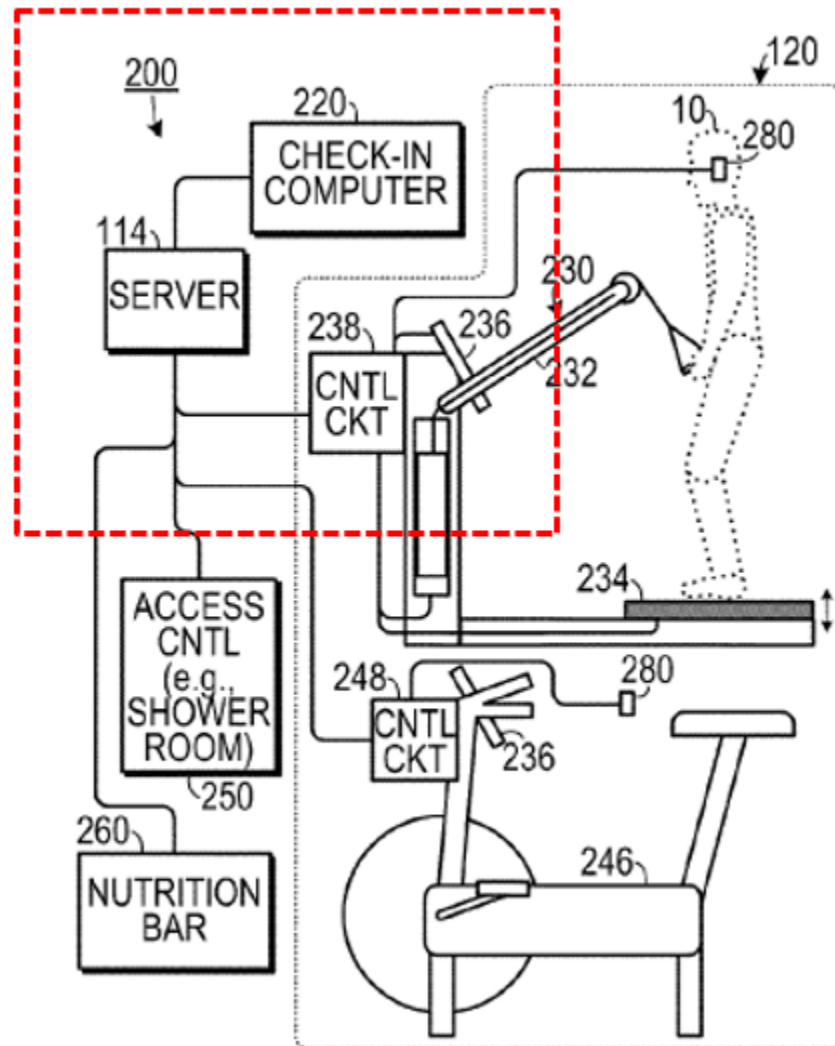
Verstegen explains that many amateur athletes desire the high-caliber training plans designed by experienced trainers for professional athletes, but generally cannot afford to work with personal trainers on a regular basis. EX1005, ¶¶ 4-6.

Thus, as Verstegen explains, demand exists for “a system that automates a substantial portion of the athletic training process.” *Id.*, ¶ 7.

To accomplish this goal, Verstegen describes a software program that receives data regarding an athlete's condition and goals and uses this data to generate a training plan (or “prescription”) for the user. *Id.*, ¶¶ 22-28. The user enters the data via a software application at a “check-in computer,” which can be either a computer located locally at a training facility or any remote computer connected to the Internet. *Id.*, ¶¶ 29, 32, 45. The check-in computer

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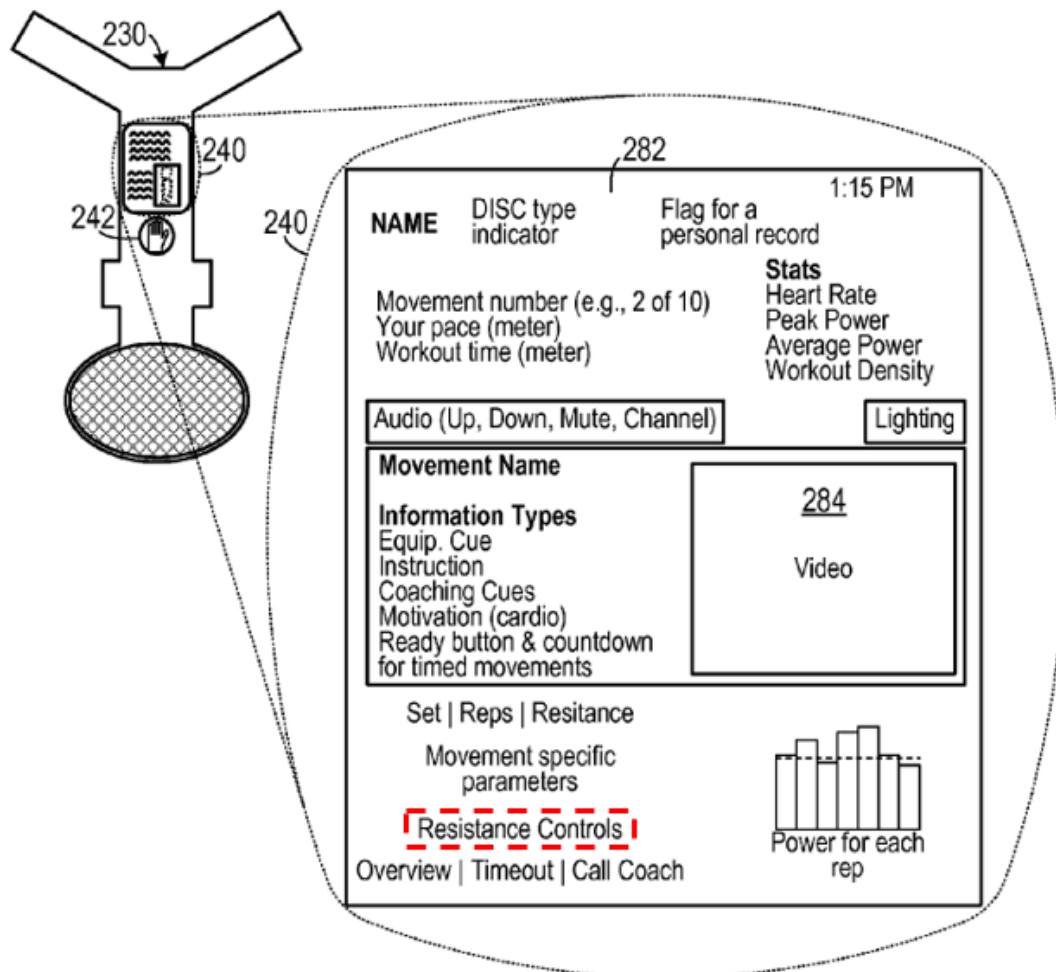
communicates with a server, which in turn communicates with the control circuit
of a strength training apparatus:



Id., Fig. 2 (annotated); *see also* Abstract, ¶¶ 8-11, 35. After generating the user's customized training plan, the software sets the operational parameters of the strength training apparatus to the levels set forth in the training plan. *Id.*, ¶¶ 22, 29, 35.

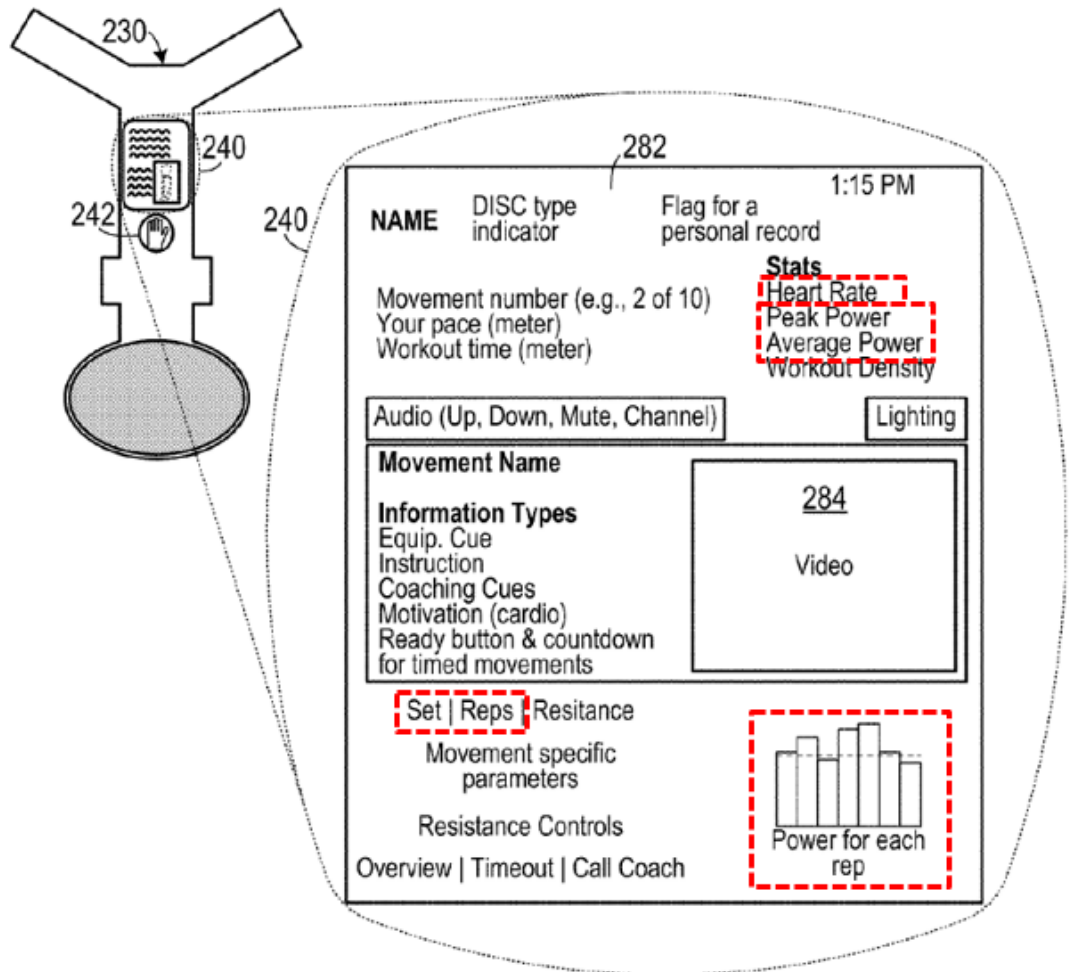
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Verstegen further describes that the control circuit **238** of the strength training apparatus is coupled to an “audiovisual user interface **236** that is used to provide information to, and receive information from, the athlete.” EX1005, ¶ 42. The audiovisual interface **236** may have a touch screen that permits the user to control or adjust exercise settings and displays information to the athlete regarding the current training activity. *Id.*, ¶¶ 42-44. As shown in Figure 4 from Verstegen, the interface includes controls to adjust the resistance on the strength training apparatus:



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Id., Fig. 4 (annotated). The interface also displays metrics like heart rate, sets, repetitions, and the power expended during each repetition:



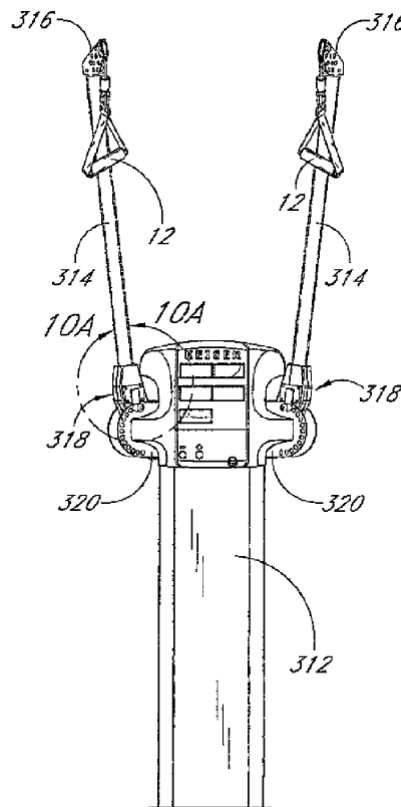
Id.; see also ¶ 43.

B. U.S. Patent No. 7,955,235 B2 (“Keiser I”)

Keiser I claims priority to a provisional application filed on November 13, 2001, was filed on January 29, 2010, and issued on June 7, 2011. Keiser I is therefore prior art to the ’268 patent under § 102 (a) and (b). Keiser I is assigned to Keiser Corporation.

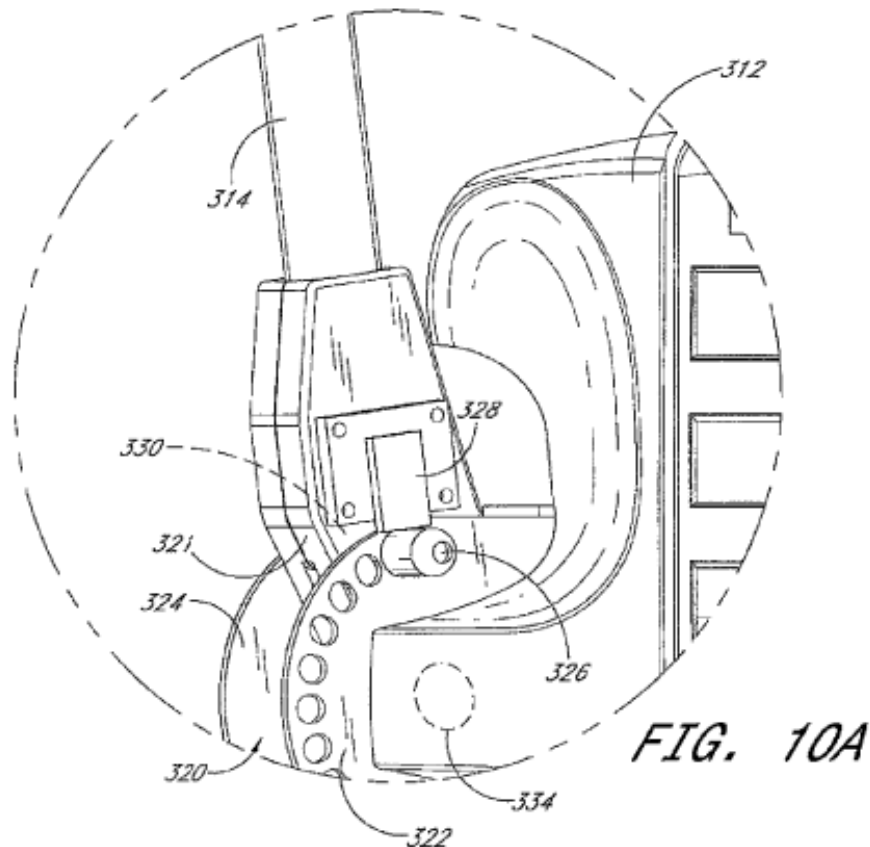
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Keiser I describes a cable strength training apparatus that utilizes pneumatic air resistance to provide “constant resistance throughout the entire exercise stroke.” EX1006, Abstract, 2:27-29, 4:24-29; EX1003 ¶¶ 81-83. A user can adjust the amount of resistance applied to the cables by pushing buttons that actuate valves that increase or decrease the air pressure within the pneumatic cylinder. EX1006, 8:29-47. In addition, the strength training apparatus “offers a range of adjustability and resistances so that a single piece of exercise equipment can be used to perform a multitude of different exercise.” *Id.*, 2:24-26. For example, in one embodiment, the strength training apparatus features a pair of adjustable arms that can be positioned at multiple different angles:



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Id., Fig. 10; *see also* 15:60-61. The arms are connected to the housing of the device via the hinge assembly **318**, which contains a locking mechanism with a knob **316** that selectively engages one of a plurality of locking holes via a dowel:



Id., Fig. 10A; *see also* 16:30-62. The user can pull out the knob **326** to disengage the dowel and select a different locking hole, thus permitting the user to adjust the arm to many different positions. *Id.*

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C. U.S. Patent No. 8,052,584 (“Keiser II”)

Keiser II claims priority to a provisional application filed on April 22, 2004, was filed on December 29, 2004, and issued on November 8, 2011. Keiser II is therefore prior art to the ’268 patent under § 102(a) and (b). Keiser II is assigned to Keiser Corporation.

Keiser II describes a strength training apparatus that: (1) permits a user to electronically control and view pneumatic resistance, EX1007, 8:01-44, 10:35-11:04, 12:26-37; and (2) calculates and displays the power expended by the user during the exercise, *id.* at 14:24-33; EX1003 ¶¶ 84-86. These features “enabl[e] an athlete or other user to maintain records of exercises performed during an exercise regimen or other program so that the user can determine whether the user’s physical capabilities are improving.” EX1007, 2:41-46.

Like Keiser I, Keiser II describes that a user can adjust the amount of resistance by pushing buttons that actuate valves that increase or decrease the air pressure within a pneumatic cylinder. *Id.*, 9:52-10:20. Keiser II adds that this process can be “accomplished by providing a respective actuator signal from each actuator button . . . to a control system **200**.” *Id.*, 10:31-35. “[T]he control system **200** receives the respective actuator signals and determines whether the user is requesting a pressure increase or a pressure decrease,” outputting the appropriate electronic control signals to the corresponding valves. *Id.*, 10:35-11:04. In

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addition, “[t]he control system **200** uses the pressure measurements to calculate the resistive force . . . perceived by [the] user,” which is then displayed on the display unit **110**. *Id.*, 12:26-37.

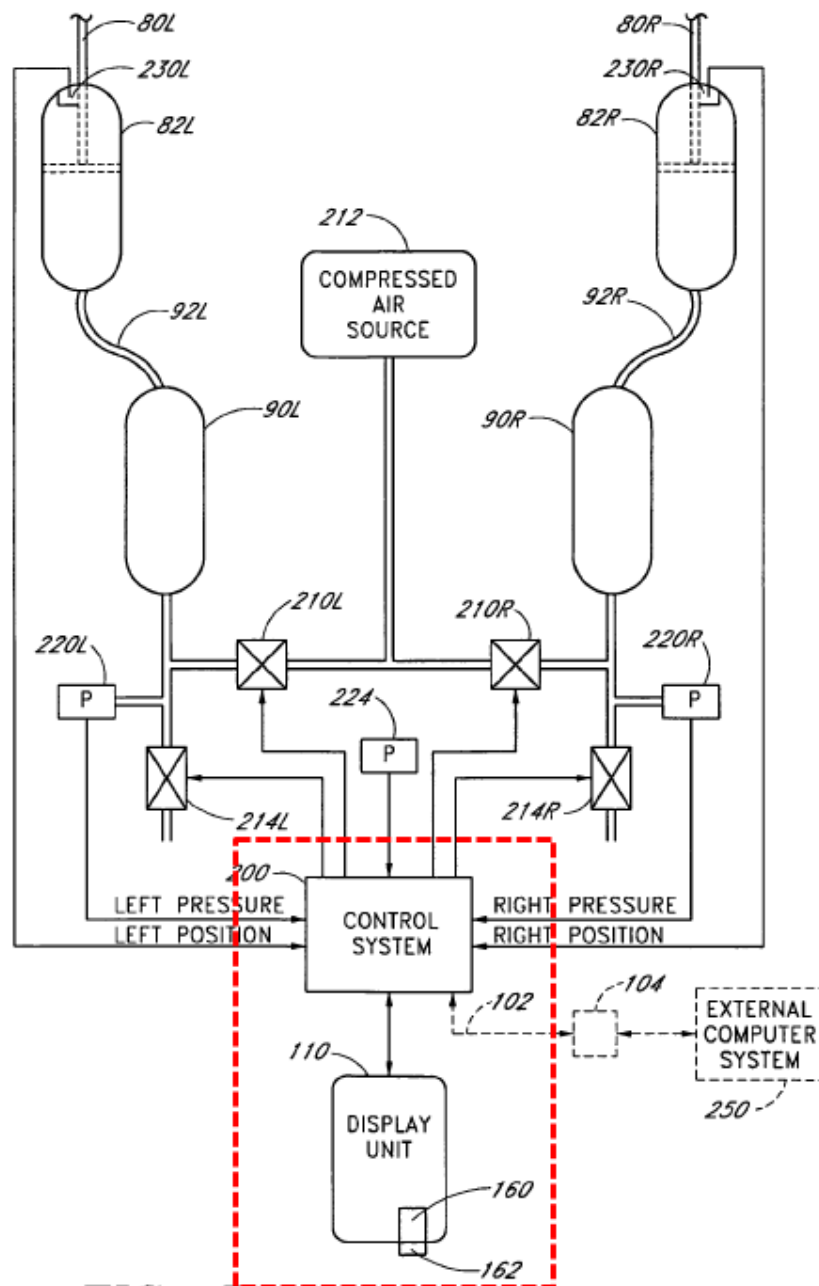
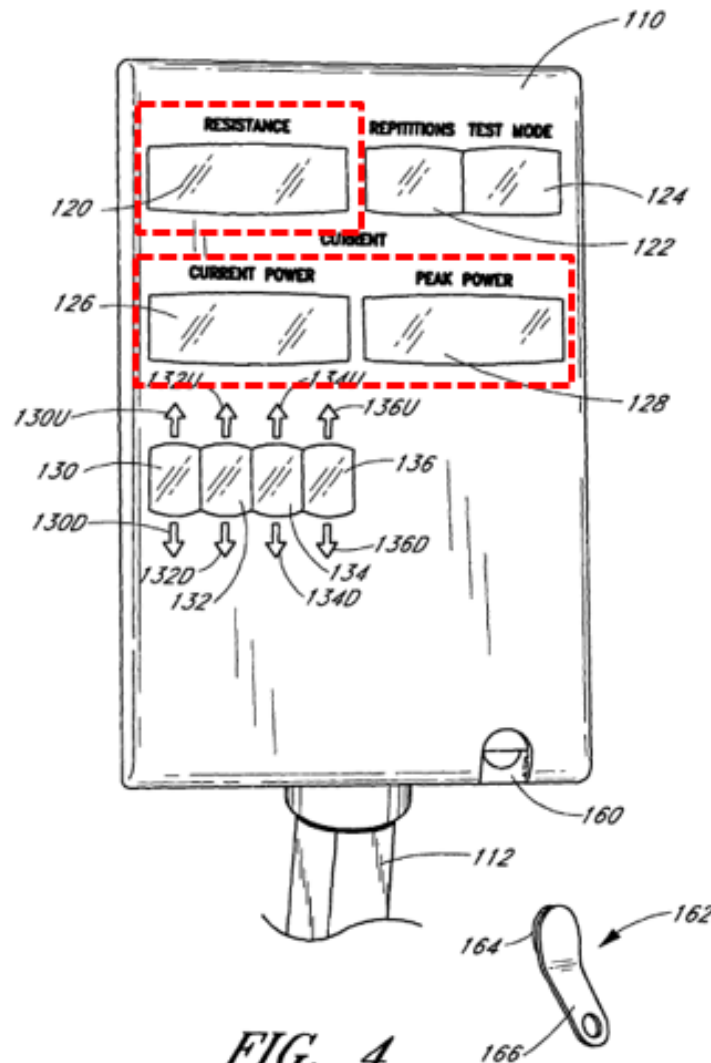


FIG. 5

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Id., Fig. 5 (annotated).

The control system **200** also calculates the peak power produced on each repetition and the highest peak power achieved during the workout. *Id.* at 14:27-33. The display unit **110** displays to the user the total resistance **120**, the peak power achieved during a particular repetition **126**, and the peak power achieved overall **128**:



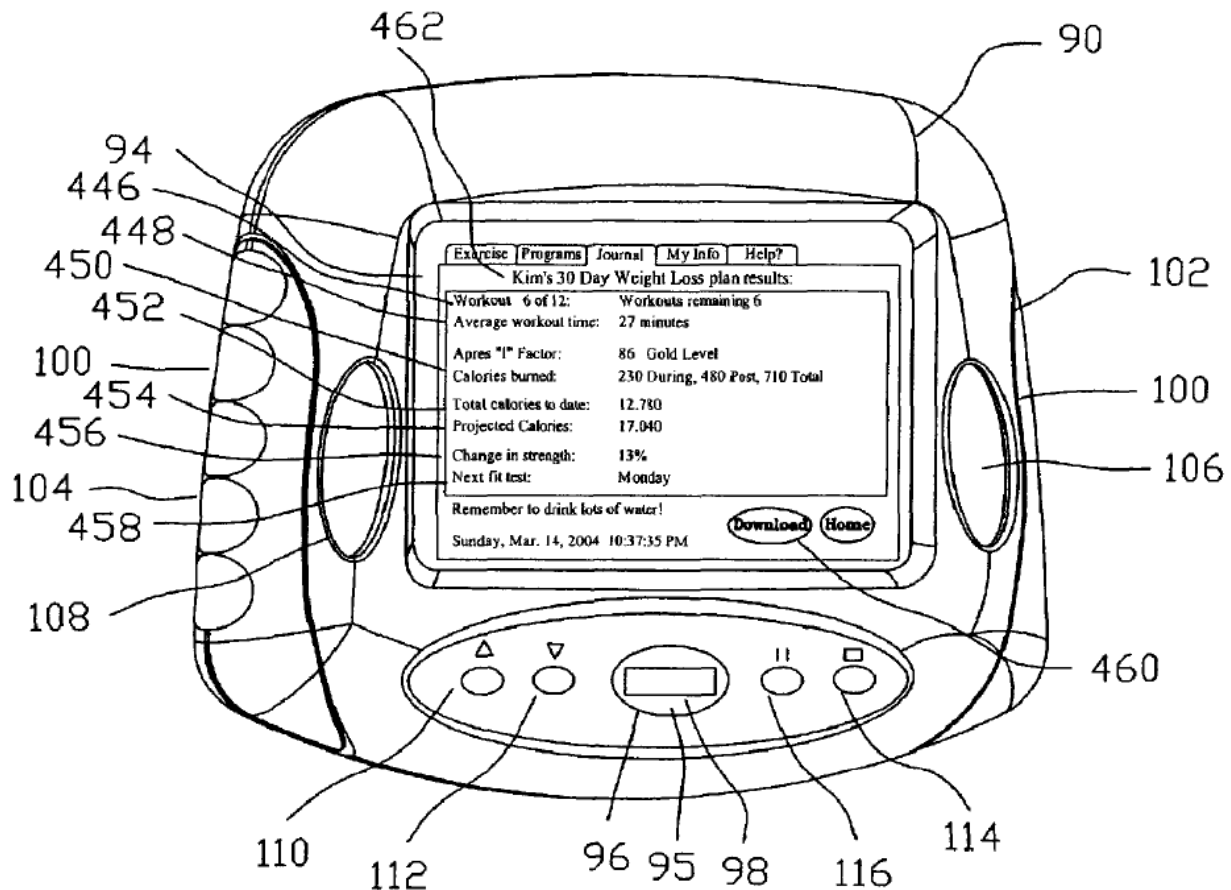
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Id., Fig. 4 (annotated); *see also* 8:33-35, 14:27-33.

D. U.S. Patent No. 8,105,209 B2 (“Lannon”)

Lannon claims partial priority to a provisional application filed on May 10, 2004, was filed on June 25, 2010, and issued on January 31, 2012. Lannon is therefore prior art to the ’268 patent under § 102 (a) and (b).

Lannon describes a strength training apparatus with an electronic control panel that is designed to guide the user through a customized workout routine. *See, e.g.*, EX1008, 1:58-66, 11:41-46, 13:39-45, 14:50-55, 16:25-30; EX1003 ¶ 87. In particular, Lannon discloses a strength training apparatus that contains “a user interface module” with “a liquid crystal touch screen display.” EX1008, 6:45-49. The software program on the user interface leads the user through “an interactive exercise program that monitors the [user’s] exercise program progress, provides exercise tips, records the operator’s personal data and fitness program results, and exports the [user’s] data to a memory storage.” *Id.*, 11:41-46. For example, the user interface is configured to provide “an exercising schedule including a 30-day weight loss plan” for the user. *Id.*, 16:10-12.



Id., Fig. 41.

VIII. GROUNDS

A. Ground 1: Claims 1 and 25 are unpatentable under § 103 over Verstegen in view of Keiser I and Keiser II

1. Obviousness to a POSA

a. Motivation to Combine

A POSA would have been motivated to combine the teachings of Keiser I and Keiser II with the teachings of Verstegen because they are all directed to the same field: strength training systems with pneumatic air resistance mechanisms

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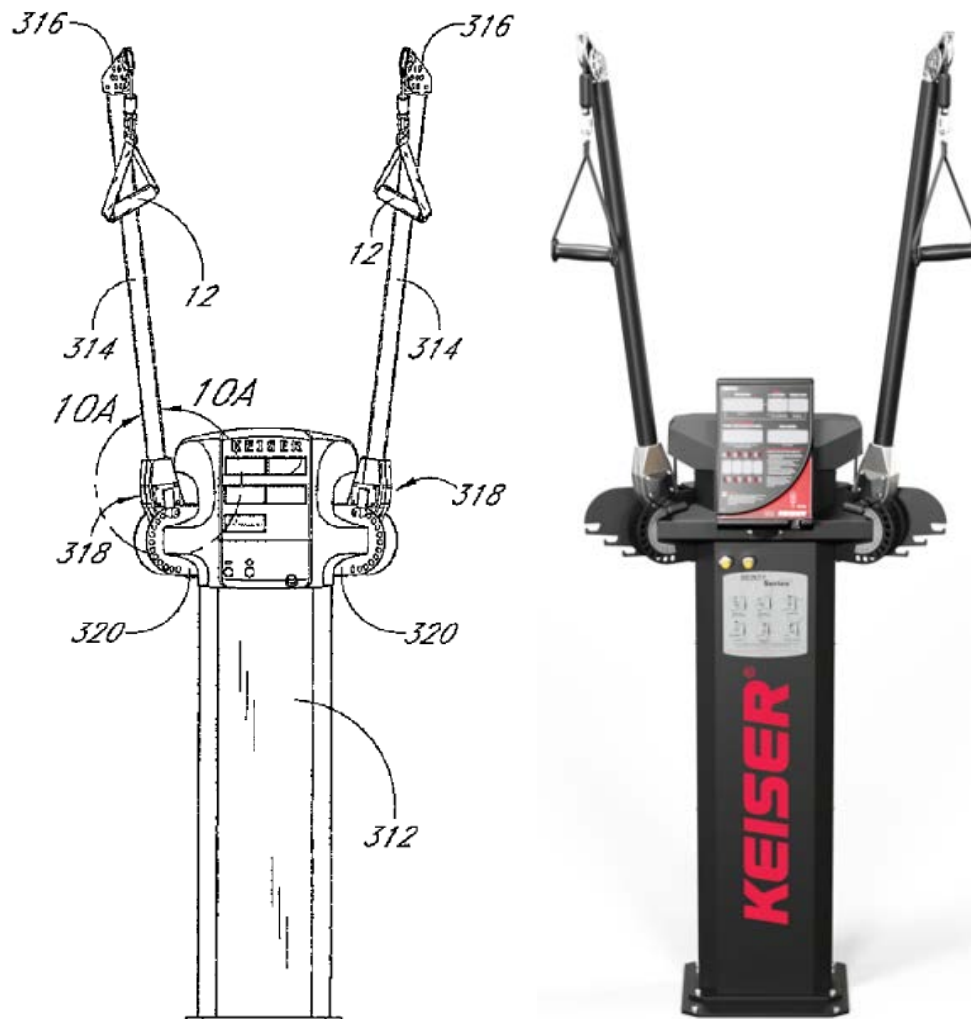
that make it easier for a user to perform a customized workout routine for a variety of different strength training exercises. EX1003, ¶ 137.

Verstegen describes a digital system that uses software to generate a customized workout routine for a strength training apparatus. *See supra* section VII(A). Verstegen explicitly discloses that the strength training apparatus could be a pneumatic “air resistance training machine of the type known to the art of fitness training.” EX1005, ¶ 35. As Verstegen explains, the advantage of using a strength training apparatus that employs air resistance is that the claimed software program can be configured to control the resistance by adjusting the air pressure in a pneumatic damper. *See id.*, ¶ 28-29; *see also* EX1003, ¶ 138. Verstegen expressly identifies “Infinity Functional Trainer, available from Keiser Corp.” as “[o]ne type of suitable exercise machine.” EX1005, ¶ 35; EX1003 ¶ 78.

Given these express disclosures, a POSA would have looked to Keiser Corporation’s devices and patents to locate an exemplary model of a strength training apparatus and resistance control mechanism suitable for use with Verstegen’s software. EX1003, ¶¶ 137-147. A POSA would have viewed the strength training apparatuses described in both Keiser I and Keiser II as suitable apparatuses to use with Verstegen’s software, and also would have been motivated to combine their respective disclosures. *Id.*

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A POSA would recognize that the strength training apparatus described in Keiser I (Figure 10, below left) corresponds to the Keiser Infinity Functional Trainer (below right), which Verstegen explicitly identifies as an apparatus suitable for use with its software:



Id., ¶ 140. This apparatus is also very similar in design to the strength training apparatus depicted in Figure 8 of Verstegen itself. *Id.*, ¶ 139. Based on these similarities, a POSA would therefore have been motivated to combine the strength

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training apparatus disclosed in Keiser I with the software program disclosed in Verstegen. *Id.*

A POSA would have been further motivated to combine Keiser I and Verstegen because Keiser I describes a strength training apparatus that can be used to perform a variety of different exercises. *Id.*, ¶ 141. Verstegen explains that the strength training apparatus used with its software should be “configured to facilitate performance of a plurality of exercises by the athlete.” EX1005, ¶ 9. Keiser I describes that the advantage of its strength training machine is that it is a “compact pneumatic exercise apparatus” that “offers a range of adjustability and resistances so that a single piece of exercise equipment can be used to perform a multitude of different exercises.” EX1006, 2:24-32. A POSA would recognize that a single exercise machine that allows a user to perform a wide variety of exercises is advantageous when designing exercise equipment intended for locations with limited space, such as home gyms or compact commercial gyms. EX1003, ¶ 141. A POSA would therefore have been motivated to use Keiser I’s strength training apparatus with Verstegen’s software in order to maximize the amount of available exercises for Verstegen’s customized workout routine while taking up a minimal amount of space. *Id.*

A POSA would have been additionally motivated to combine Keiser I and Verstegen because Keiser I describes a strength training device that uses pneumatic

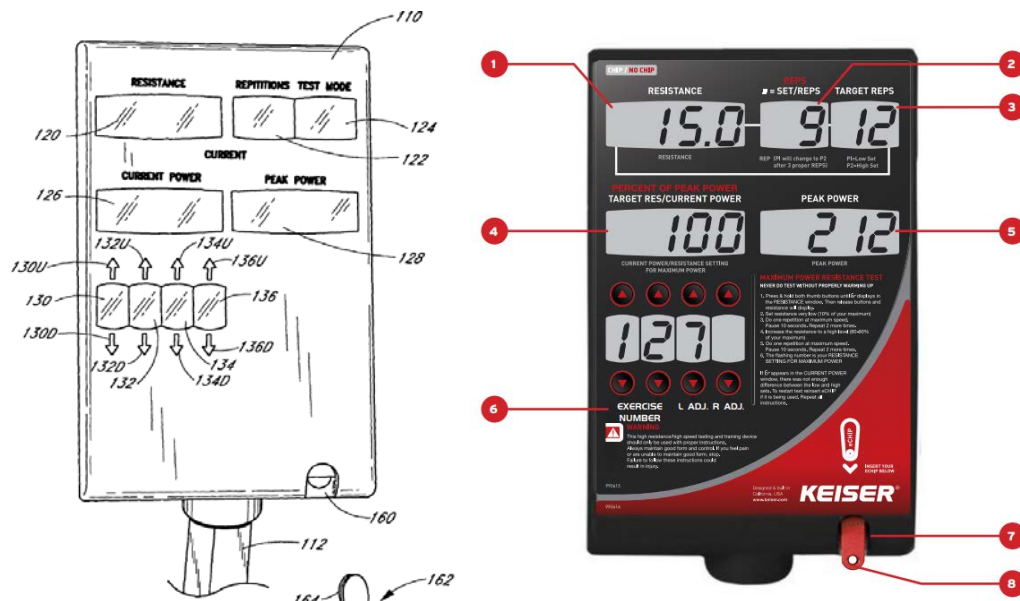
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air resistance. *Id.*, ¶ 142. Again, Verstegen discloses that its software may be configured to control resistance in the strength training apparatus by adjusting the air pressure in a pneumatic air resistance mechanism. EX1005, ¶ 28-29; *see also* EX1003, ¶¶ 100-102. Keiser I describes that its strength training apparatus includes a “resistance assembly 16” that employs a pneumatic actuator and pneumatic cylinder to selectively control the resistance applied to the cables. EX1006, 4:49-54, 7:23-30, 7:41-49, 15:55-56. The user can adjust the amount of resistance applied to the cables by pushing buttons that actuate valves that increase or decrease the air pressure within the pneumatic cylinder. *Id.*, 8:29-47. A POSA would have understood that this type of pneumatic resistance mechanism is the type that Verstegen describes can be controlled by its software. EX1003, ¶ 142.

A POSA also would have been motivated to combine Verstegen and Keiser I with Keiser II. EX1003 ¶¶ 143-146. Verstegen describes that its software program is in communication with an electronic control panel on the strength training apparatus. *See* EX1005, ¶¶ 42-44; EX1003, ¶ 143. The electronic control panel is configured to control and display the resistance on the device, as well as calculate and display other metrics like repetitions and power. *Id.* Keiser II describes an electronic control panel that performs all of these functions, and that can be used in particular with a pneumatic air resistance device like the one described in Keiser I and Verstegen. EX1003, ¶ 144. Specifically, Keiser II both: (1) describes how a

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pneumatic resistance system that operates in an identical way to the one described in Keiser I (where a user adjusts the amount of resistance by pushing buttons that actuate valves in a pneumatic cylinder) can be controlled electronically, EX1007, 9:52-11:04; EX1003, ¶ 144; and (2) describes how the pneumatic resistance (and force exerted by the user) can be tracked and displayed on an electronic control panel like the one described in Verstegen, EX1007, 8:33-35, 10:35-58, 12:26-37; EX1003 ¶ 144. A POSA would therefore have looked to Keiser II for its teachings regarding an electronic control panel that can be used with both Keiser I's device and Verstegen's software. *Id.* Indeed, the electronic control panel disclosed in Keiser II is quite similar the one in the Keiser Infinity Functional Trainer, which Verstegen specifically identified as suitable for use with its software:



Id., ¶ 145.

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A POSA would have also been motivated to combine the disclosures of Keiser I and Keiser II together given the common assignee and the overlapping subject matter. Indeed, Keiser Corporation’s current website (which lists fewer than ten United States utility patents) identifies Keiser I and Keiser II as jointly “applicable” to over 50 of its products, including the Keiser Infinity Functional Trainer. *Id.*, ¶ 147. Keiser II also cites to U.S. Patent Appl. No. 2003/0115955A1, an application in the same family as Keiser I that contains an identical specification and therefore identical disclosures. *Id.*

b. Reasonable Expectation of Success

A POSA would also have had a reasonable expectation of success in combining the disclosures of Verstegen with Keiser I and Keiser II. *Id.*, ¶¶ 148-151. As discussed above, Verstegen expressly discloses that the Keiser Infinity Functional Trainer can be used with the software disclosed in Verstegen and Keiser I describes an apparatus analogous to this product. *Id.*, ¶ 148. Adding software functionality such as that described in Verstegen would have been routine for a POSA as of March, 2013 and there would have been no technical obstacles associated with such a combination, as reflected by the fact that many of the then-existing cable machines included electronic displays and associated software. *Id.*

Additionally, a POSA would have had a reasonable expectation of success in combining the disclosures of Keiser II relating to the electronic panel with the

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combined apparatus/software of Keiser I and II. *Id.*, ¶ 149. A POSA would have understood that the buttons described in Keiser I are functionally identical to the buttons described in Keiser II and could likewise be coupled to a “control system **200**” that outputs electronic control signals to operate the corresponding valves in the pneumatic cylinder. EX1007, 10:35-11:04; EX1003, ¶ 149. Implementing Keiser II’s control system **200** in Keiser I’s apparatus would have been a matter of ordinary intuition and common sense given Keiser II’s express teachings on how to implement these controls in a substantially identical pneumatic air resistance mechanism. *Id.*

A POSA would also have had a reasonable expectation of success in combining Verstegen’s software with Keiser II’s electronic control panel. *Id.*, ¶ 150. A POSA would have understood that Keiser II’s control system **200** is functionally equivalent to Verstegen’s control circuit **238**, as both are made up of generic processors and associated circuitry and memory that are configured to: (1) control a pneumatic air resistance mechanism in the strength training apparatus; and (2) communicate with an electronic display. *Id.* Both Verstegen’s control circuit **238** and Keiser II’s control system **200** are implemented using generic components that are connected to other generic components and devices (like their associated displays) using known techniques. *Id.* A POSA would have understood that Keiser II’s control system and display could easily be configured to run

different kinds of software.*Id.* A POSA would therefore have understood that Verstegen’s software program and associated functions could easily be implemented using Keiser II’s control system **200** and combined with the apparatus described in Keiser I. *Id.*, ¶ 151.

2. Claim 1

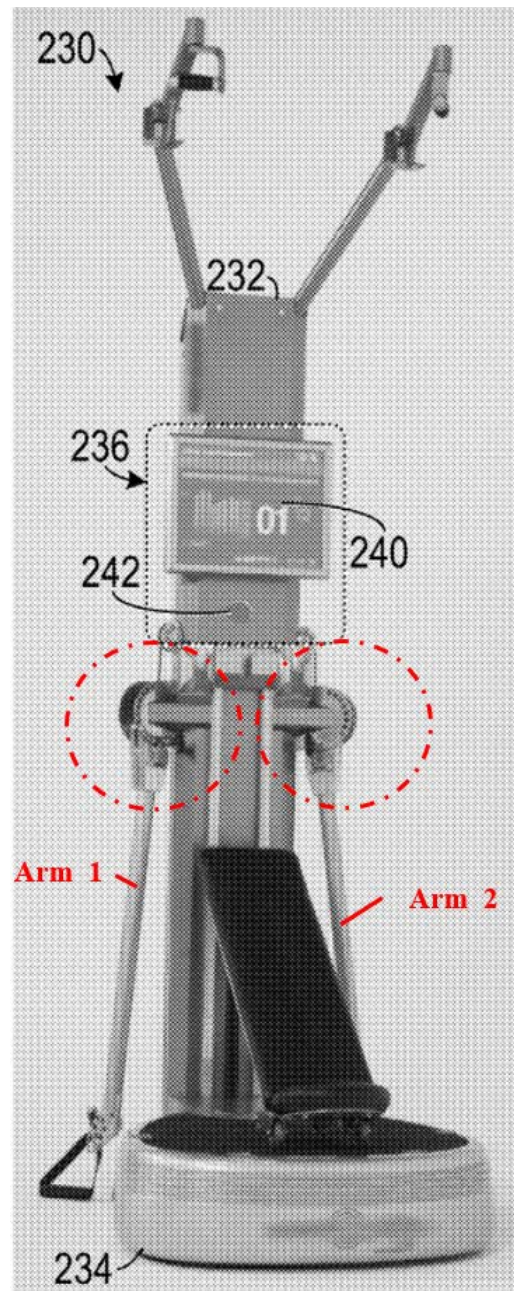
a. [1.P] A strength training apparatus comprising:

To the extent the preamble is limiting, Verstegen discloses this limitation. Verstegen describes that its exercise system “includes a strength training apparatus 230 (such as a resistance training apparatus well known to the art of athletic training).” EX1005, ¶ 34; EX1003 ¶ 88.

b. [1.1] a first arm and a second arm each being configured to be selectively pivoted independent of each other at multiple angles relative to each other;

Verstegen discloses this limitation. Figure 8 of Verstegen depicts an embodiment of the strength training apparatus 230 that includes two adjustable arms:

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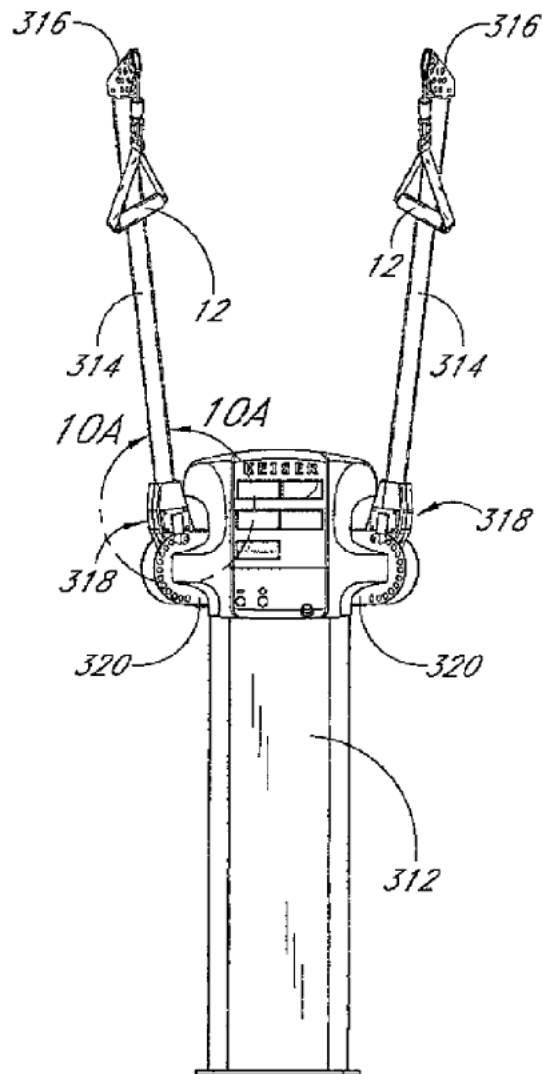
EX1005, Fig. 8 (annotated). A POSA would recognize that the circled portions of the figure depict circular hinge assemblies that couple the arms to the strength training apparatus. EX1003, ¶¶ 89-90. A POSA would further recognize that the holes depicted on the hinge assembly's circular bracket plates indicate that the

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hinge assembly contains a locking mechanism that engages a pin or dowel to allow the arms to pivot independently at multiple angles. *Id.*, ¶ 90. Even if Verstegen did not explicitly disclose that the two arms are “configured to be selectively pivoted independent of each other at multiple angles relative to each other,” it would have been obvious to a POSA to incorporate these features because, as described in Section II above, dual cable arm designs of this type were well known in the art and conveyed many known advantages, including that they allowed a user to perform many different types of strength training exercises using the same device. *Id.*, ¶ 91.

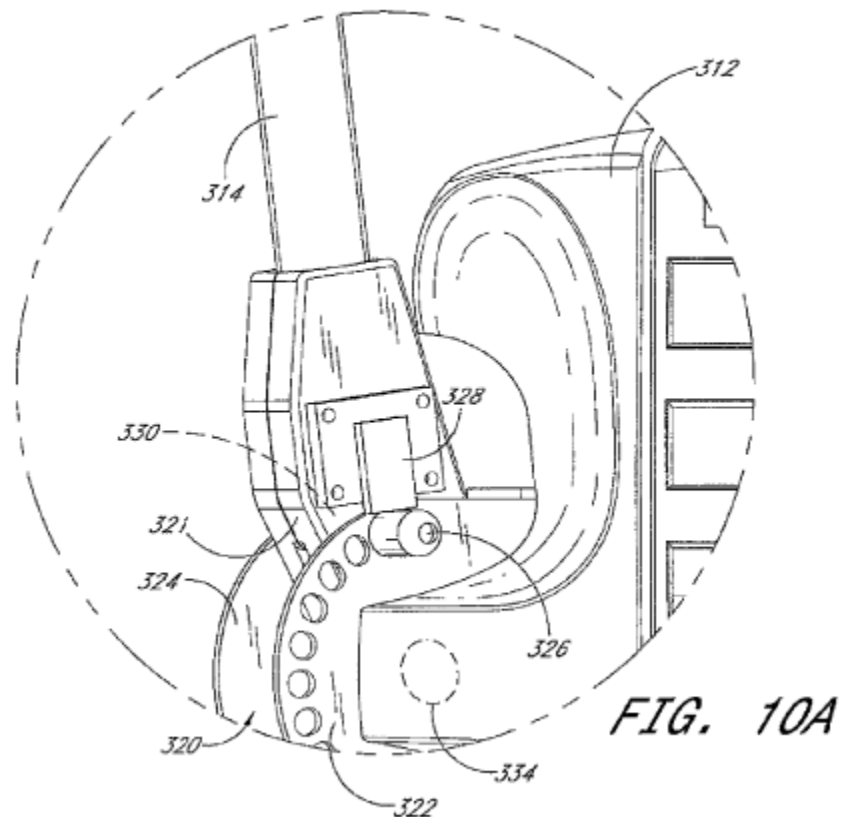
Keiser I also explicitly describes selectively pivotable arms in a strength training apparatus. Keiser I’s strength training apparatus contains a “pair of adjustable arms **314**.” EX1006, 15:60-61. A “hinge assembly **318** hinges the opposite end of each arm **314** to the housing **312**. Each hinge assembly **318** provides about 180° of movement . . . in order to vary the vertical position of the corresponding handle pulley assembly **316**.” *Id.*, 16:30-35.

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Id., Fig. 10. Each hinge assembly contains a “locking mechanism” with “bracket plates **322**, **324** [that] include[] a plurality of locking holes **325** that are spaced in an arcuate pattern along an outer edge of the bracket plate”:

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EX1006, Fig. 10A, *see also id.*, 16:43-52. The locking mechanism contains a “knob **326** that controls a dowel,” which “selectively engages one of the locking holes.” *Id.*, 16:52-55. Using the knob, the users can position the arms straight up, straight down, or “selectively locked in a number of positions between these two extremes,” to perform a variety of exercises. *Id.*, 16:35-42; *see also id.* at 16:55-56. Keiser I thus describes a “first arm and a second arm each being configured to be selectively pivoted independent of each other at multiple angles relative to each other.” EX1003, ¶¶ 92-93.

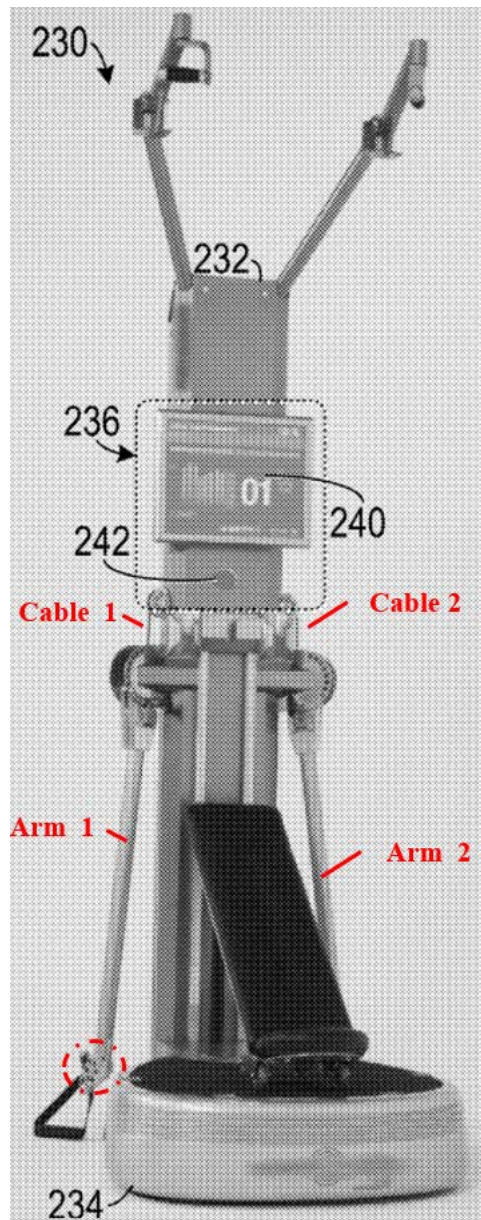
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For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser I to the strength training apparatus in Verstegen. Accordingly, to the extent the arms required by this limitation would not have been obvious based on Verstegen alone, they would nonetheless have been obvious based on Verstegen in combination with Keiser I. *See id.*, ¶¶ 94, 137-151.

- c. **[1.2] a first pulley coupled to an end of the first arm; a first cable extending through the first arm and the first pulley; a second pulley coupled to an end of the second arm; a second cable extending through the second arm and the second pulley;**

Verstegen discloses this limitation. Figure 8 of Verstegen depicts an embodiment of the strength training apparatus **230** that includes two arms coupled to two pulleys through which two cables extend:

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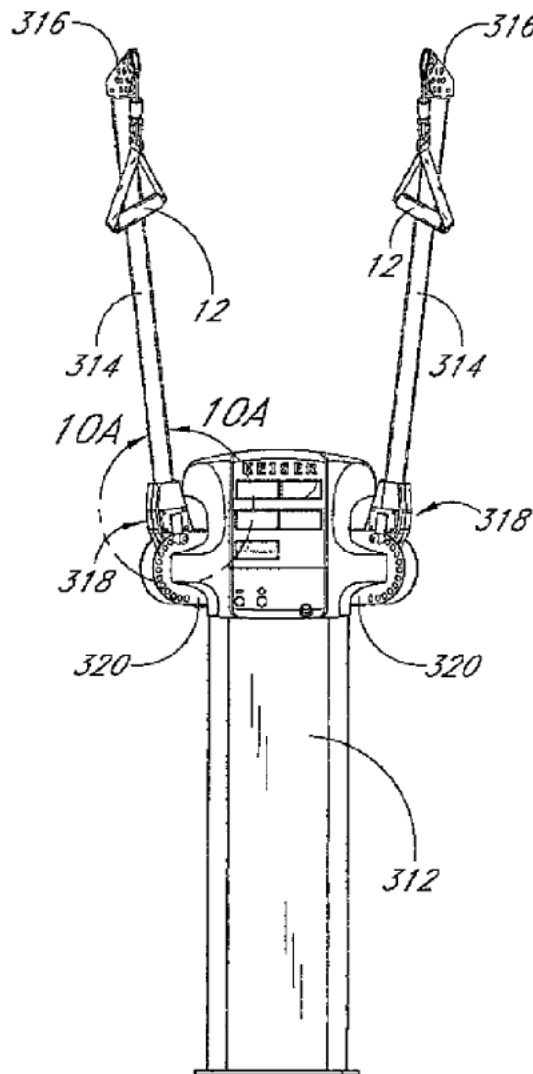
EX1005, Fig. 8 (annotated). A POSA would recognize that the circled portion of the figure depicts a pulley coupled to the end of the first arm through which the first cable would extend, permitting the user to perform an exercise by pulling on the handle attached to the cable. EX1003, ¶ 95. Though the end of the second arm is hidden out of view, a POSA would understand that a corresponding pulley and

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handle would be attached to the end of the second arm to permit a user to perform an exercise simultaneously with both arms. *Id.* Even if Verstegen did not explicitly disclose any portion of this limitation, it would have been obvious to a POSA to incorporate these features into Verstegen’s strength training apparatus because, as described in Section II above, dual cable arm designs of this type were well known in the art and conveyed many known advantages, including that they allowed a user to perform many different types of strength training exercises using the same device. *Id.*, ¶ 96.

The claimed configuration of arms, pulleys, and cables is also explicitly described in Keiser I. Keiser I’s strength training apparatus has two arms **314** that have “a tubular structure through which the user cable **306** passes” and a “handle pulley assembly **316**” that is attached to the outer end of each arm “via a hinge connection.” EX1006, 16:06-08. “The first end of the user cable **306** is threaded over the pulley of the handle pulley assembly **316** and one of the handles **12** is connected to this first end of the user cable.” *Id.*, 16:18-20.

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Id., Fig. 10. Keiser I therefore describes “a first pulley coupled to an end of the first arm; a first cable extending through the first arm and the first pulley; a second pulley coupled to an end of the second arm; a second cable extending through the second arm and the second pulley.” EX1003, ¶¶ 97-98.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser I to the strength training apparatus in

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Verstegen. Accordingly, to the extent the configuration required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I. *See id.*, ¶¶ 99, 137-151.

- d. **[1.3] an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic control panel including: a processor and a memory configured to control a current level of resistance,**

Verstegen discloses this limitation. Verstegen describes that the “strength training apparatus **230** has an audiovisual interface **236**” that is “in data communication with [a] control circuit **238**.” EX1005, ¶ 42. A POSA would recognize that Verstegen’s audiovisual interface **236** and corresponding control circuit **238** constitute an “electronic control panel” as described by the ’268 patent. EX1003, ¶ 100.

The “control circuit **238** (which might include a local processor and associated circuitry)” is “in communication with [a] server **114**” and is “configured to apply resistance settings” to the strength training apparatus. EX1005, ¶ 35. For example, via the control circuit **238**, “[t]he server can set the exercise machine to have a desired resistance level for the exercise by controlling the pressure in the pneumatic damper.” *Id.*, ¶¶ 29, 35, Fig. 2. A POSA would understand that in a cable machine like the one described in limitations [1.1] and [1.2], resistance

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would be applied to the cables, so that the user's muscles are engaged while pulling on the cables. EX1003, ¶ 101. In addition, Verstegen discloses that the digital system that runs the server and control circuit **238** includes "data storage," or memory, EX1005, ¶ 33, and a POSA would understand that the control circuit **238** would itself require a processor and memory in order to function. EX1003, ¶ 102.

Even if Verstegen did not explicitly disclose any portion of this limitation, it would have been obvious to a POSA to incorporate these features into the electronic control panel in Verstegen because, as described in Section II above, electronic control panels with processors and memories that permitted a user to adjust the resistance on a cable machine were well known in the art and conveyed many known advantages, including that they were intuitive to users and allowed the user greater access to and control over the level of resistance. *Id.*, ¶ 103.

Keiser II also explicitly discloses the claimed electronic control panel. Keiser II describes a strength training apparatus that includes a display unit **110** and corresponding control system **200**:

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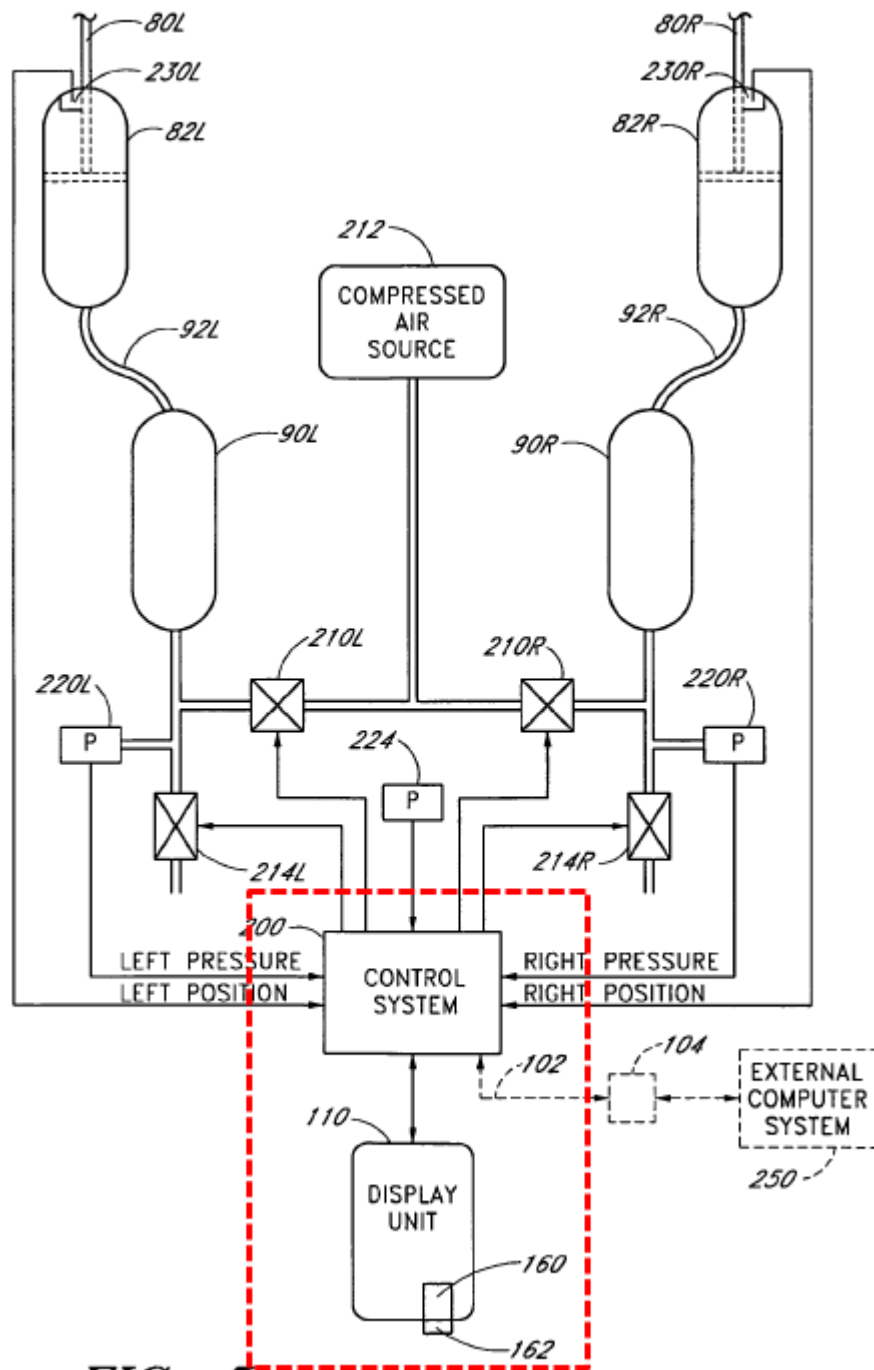


FIG. 5

Keiser II

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EX1007, Fig. 5 (annotated). A POSA would recognize that Keiser II's display unit **110** and corresponding control system **200** constitute an "electronic control panel" as described by the '268 patent. EX1003, ¶ 104.

As Keiser II explains, "the control system **200** comprises a plurality of microprocessors programmed to perform specific functions, such as real-time measurement and adjustment of air pressures, real-time measurement of positions and computation of velocities, communicating with the user via the display panel, and the like." EX1007, 10:35-42. A user can adjust the amount of resistance applied to the two arms of the device by pushing buttons that send actuator signals to the control system **200**, which cause the apparatus to increase or decrease resistance by adjusting pneumatic pressure. *Id.*, 8:33-44, 10:17-35, 10:43-63, 12:26-37. The control system **200** necessarily includes a memory that contains the information required to perform these functions. EX1003, ¶¶ 105-106. Keiser II thus describes an electronic control panel with a processor and a memory configured to control a current level of resistance. *Id.*

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures in Keiser II to the strength training apparatus in Verstegen. Accordingly, to the extent the electronic control panel required by this limitation would not have been obvious based on Verstegen alone, it would

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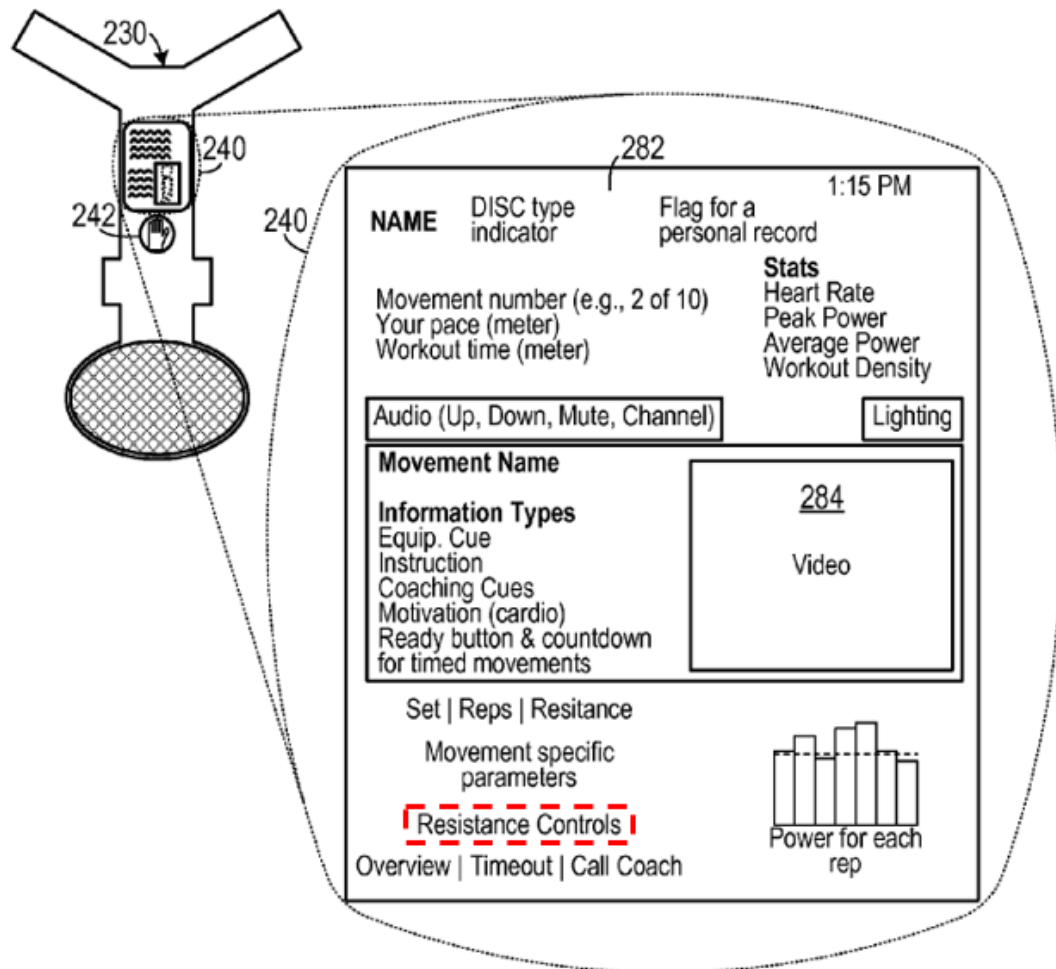
nonetheless have been obvious based on Verstegen in combination with Keiser II.

See id., ¶¶ 107, 137-151.

e. [1.4] an electronic input device configured to allow the user to set the current level of resistance, and

Verstegen discloses this limitation. Verstegen discloses that strength training apparatus's audiovisual user interface **236** “can include a video display **240** (which could include a touch screen display capable of receiving input from the athlete **10** and transmitting it to the server **114**), a user input button **242** and audio speakers” EX1005, ¶ 42. As depicted in Figure 4, below, the screen **282** on the video display can “include control inputs, such as: . . . resistance settings” *Id.*, ¶ 43.

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Id., Fig. 4 (annotated). A POSA would recognize that the touchscreen disclosed in Verstegen, which contains resistance controls, is an electronic input device configured to allow the user to set the current level of resistance. EX1003, ¶ 108.

Even if Verstegen did not explicitly disclose any portion of this limitation, it would have been obvious to a POSA to incorporate these features into the electronic control panel in Verstegen because, as described in Section II above, control panels with electronic input devices that permitted a user to adjust the resistance on a cable machine were well known in the art and conveyed many

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known advantages, including that they were intuitive to users and allowed the user greater access to and control over the level resistance. *Id.*, ¶ 109.

Keiser II also explicitly describes the claimed input device. Keiser II discloses that the user can adjust the amount of resistance applied to the cables by pushing actuator buttons **66R** and **66L**, which are linked to the control system **200**. EX1007, 10:24-42, 12:26-37. As described further in limitation [1.3], these buttons electronically direct the control system **200** to communicate commands to the pneumatic resistance system to adjust the level of resistance. *Id.*, 8:33-44, 10:31-58, 12:26-37. Keiser II thus describes “an electronic input device configured to allow the user to set the current level of resistance.” EX1003, ¶ 110.

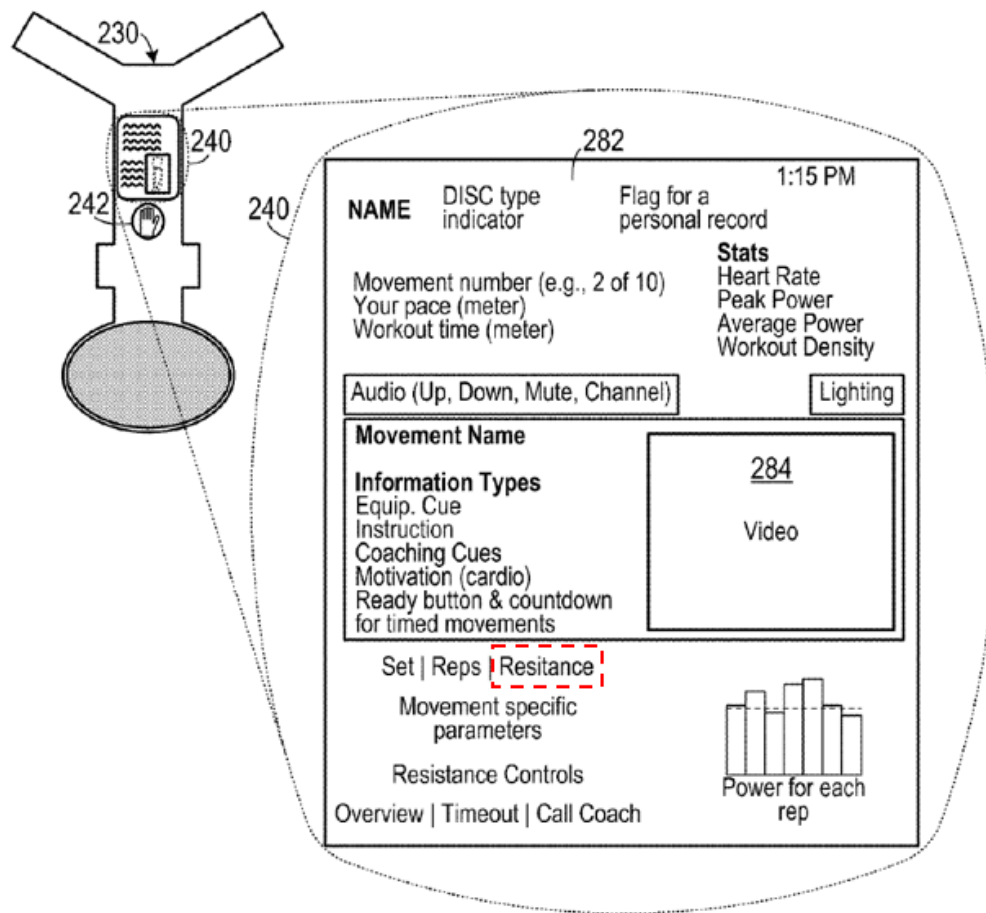
For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures in Keiser II to the strength training apparatus in Verstegen. Accordingly, to the extent the electronic input device required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser II. *See id.*, ¶¶ 111, 137-151.

f. [1.5] and an electronic output device configured to display the current level of resistance.

Verstegen discloses this limitation. Verstegen discloses that the screen **282** on the strength training apparatus’s audiovisual user interface **236** “displays

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information to the athlete regarding the current training activity” including “movement specific parameters.” EX1005, ¶ 43. As depicted in Figure 4, below, the screen 282 displays the current level of resistance.



Id., Fig. 4 (annotated). A POSA would recognize that the audiovisual user interface disclosed in Verstegen is an electronic output device configured to display the current level of resistance. EX1003, ¶ 112.

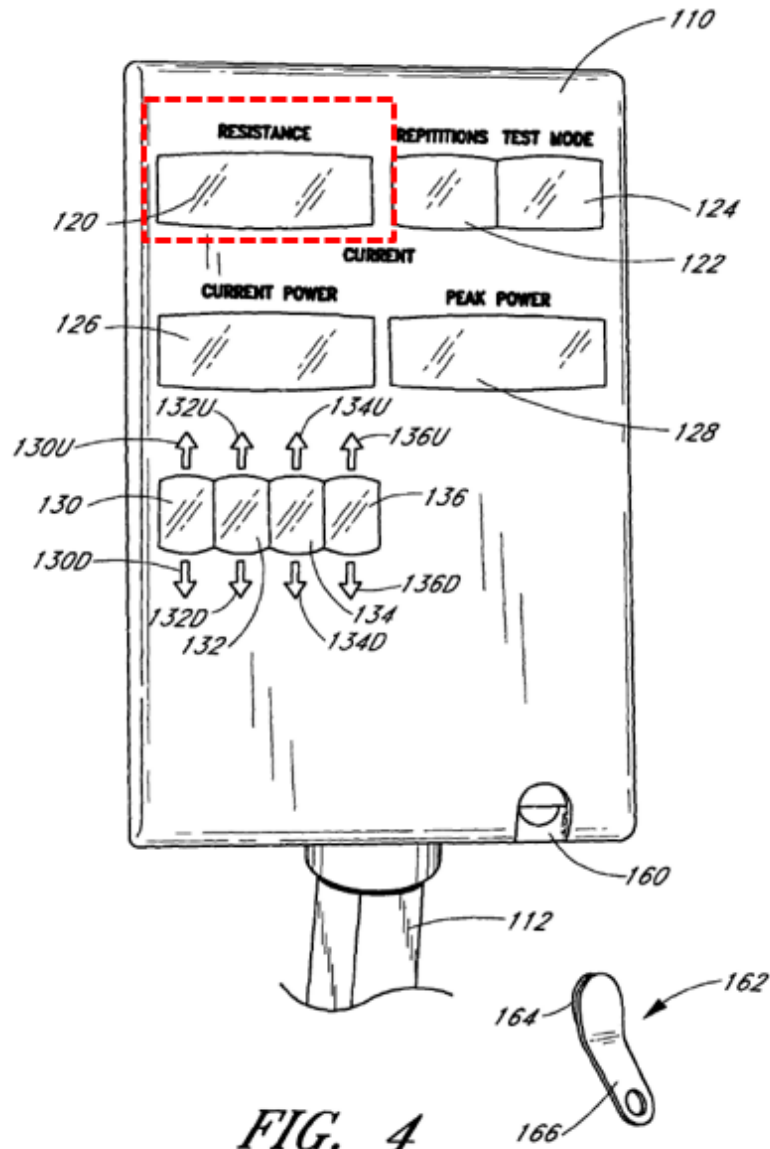
Even if Verstegen did not explicitly any portion of this limitation, it would have been obvious to a POSA to incorporate these features into the electronic

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control panel in Verstegen because, as described in Section II above, cable machines with electronic output devices that displayed the current level of resistance to the user were well known in the art and conveyed many known advantages, including that they allowed the user greater access to and control over the level resistance. *Id.*, ¶ 113.

Keiser II also explicitly describes the claimed output device. Keiser II teaches that its “display panel comprises a RESISTANCE indicator **120** that displays the total resistance applied to the two handgrips” EX1007, 8:33-35. “The control system **200** uses the pressure measurements [from the pneumatic cylinders] to calculate the resistive force that will be perceived by a user when the handgrips are moved.” *Id.*, 12:26-28. “The calculated resistive force is advantageously displayed as the resistance on the RESISTANCE indicator **120** of the display unit **110** so that a seated user can readily observe the resistance selected by using the left actuator button **66L** and the right actuator button **66R**.” *Id.*, 12:28-32.

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Id., Fig. 4 (annotated). Thus, a POSA would recognize that display unit described in Keiser II is an electronic output device configured to display the current level of resistance. EX1003, ¶ 114.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures in Keiser II to the strength training apparatus in Verstegen. Accordingly, to the extent the electronic output device required by this

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limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser II. See EX1003, ¶¶ 115, 137-151.

3. Claim 25

a. [25.P] A strength training apparatus comprising:

As discussed in limitation [1.P], Verstegen discloses this limitation.

EX1003 ¶ 116.

b. [25.1] a first arm and a second arm each being configured to be selectively pivoted independent of each other to be selectively positioned at multiple angles relative to each other;

As discussed in limitation [1.1], Verstegen, or Verstegen in combination with Keiser I, discloses this limitation. EX1003 ¶¶ 117-119.

c. [25.2] a first pulley coupled to an end of the first arm; a first cable extending through the first arm and the first pulley; a second pulley coupled to an end of the second arm; a second cable extending through the second arm and the second pulley; and

As discussed in limitation [1.2], Verstegen, or Verstegen in combination with Keiser I, discloses this limitation. EX1003 ¶¶ 120-122.

d. [25.3] an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic

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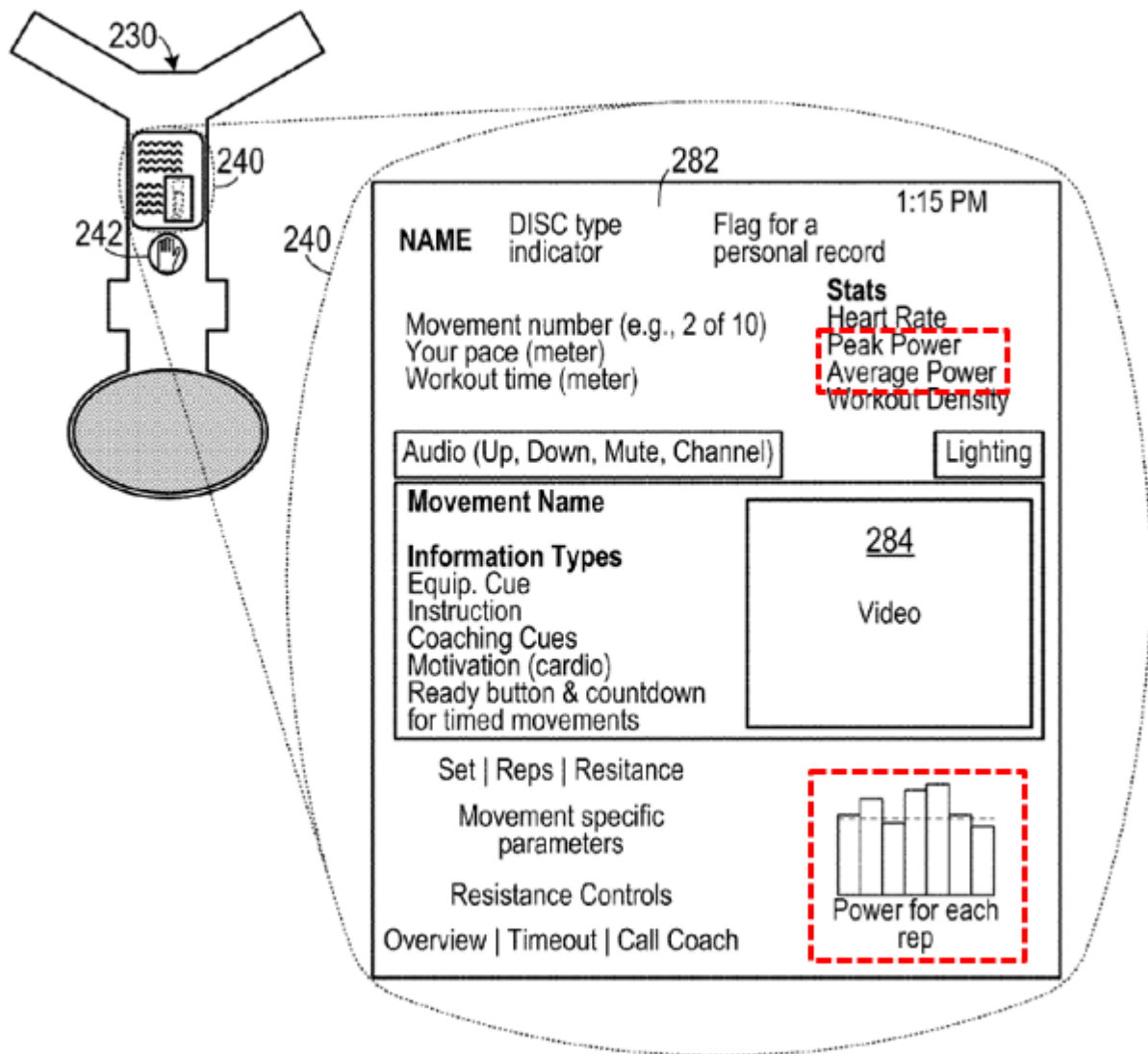
control panel including: a processor and a memory configured to control a current level of resistance,

As discussed in limitation [1.3], Verstegen, or Verstegen in combination with Keiser II, discloses this limitation. EX1003 ¶¶ 123-125.

- e. **[25.4] the processor and the memory further configured to calculate an amount of power expended within a period of time by the user pulling on the first cable and/or the second cable,**

Verstegen discloses this limitation. As described in limitations [1.P] to [1.3], Verstegen, or Verstegen in combination with Keiser I, discloses a strength training apparatus in which a user performs exercises by pulling on the first cable and/or the second cable. Verstegen further discloses that the screen **282** on the strength training apparatus's audiovisual user interface **236** “displays information to the athlete regarding the training activity” including “the average power exerted by the athlete (including a histogram showing the power exerted in each repetition).” EX1005, ¶ 43. As depicted in Figure 4, below, the screen **282** displays the power expended by the user during the workout:

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EX1005, Fig. 4 (annotated). A POSA would understand these disclosures to mean that Verstegen’s electronic control panel is both calculating and displaying the “power” expended by a user pulling on the cable(s) of the strength training apparatus within a particular period of time. EX1003, ¶ 126.

Keiser II also discloses that the processor and memory of its electronic control panel are configured to calculate and display power. EX1003, ¶¶ 127-128.

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Keiser II describes that “[t]he software in the control system **200** advantageously calculates the peak power produced on each repetition and displays the peak power as the current power on the current power indicator **126**.” EX1007, 14:27-31.

Additionally, Keiser II discloses that “[t]he software also maintains a record of the highest peak power achieved during any repetition and displays that value on the peak power indicator **128**.” *Id.*, 14:31-33.

Keiser II discloses that the software performs these functions by “determin[ing] the maximum velocity achieved by the user during the repetition,” and then “calculat[ing] the maximum power produced by the user during the repetition based on the resistance level and the maximum velocity.” *Id.*, 17:09-19. As depicted below, “the maximum power can be displayed to encourage the user to move the levers at greater velocity” on the display unit **110**. *Id.*, 17:19-21.

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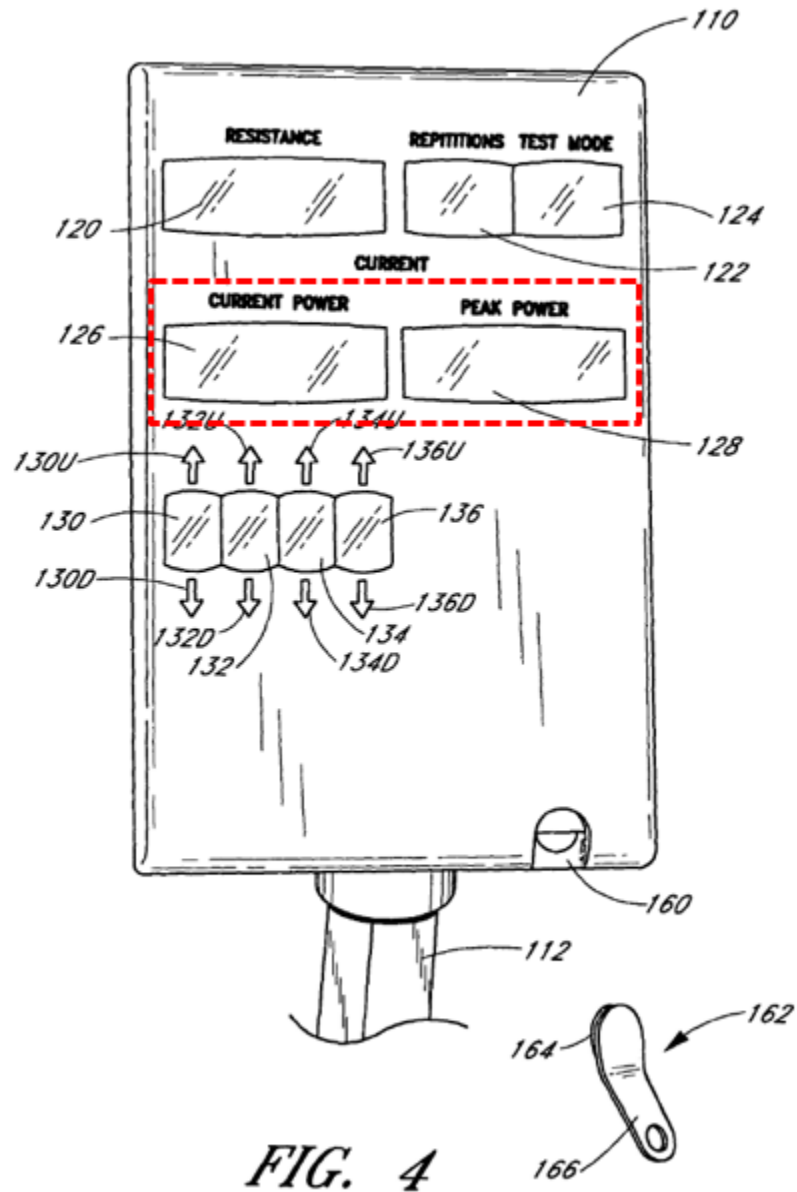


FIG. 4

Id., Fig. 4 (annotated); EX1003 ¶ 127.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser II to the strength training apparatus in Verstegen. Accordingly, to the extent the calculation of power required by this

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limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser II. *See* EX1003, ¶¶ 129, 137-151.

f. [25.5] an electronic input device configured to allow the user to set the current level of resistance, and

As discussed in limitation [1.4], Verstegen, or Verstegen in combination with Keiser II, discloses this limitation. EX1003 ¶¶ 130-132.

g. [25.6] an electronic output device configured to display the current level of resistance,

As discussed in limitation [1.5], Verstegen, or Verstegen in combination with Keiser II, discloses this limitation. EX1003 ¶¶ 133-135.

h. [25.7] the electronic output device further configured to display the calculated amount of power.

As discussed in limitations [1.5] and [25.4], both Verstegen and Keiser II describe that their respective electronic output devices are configured to display the calculated amount of power. For the reasons stated in Section VIII.A.1, it would have been obvious to a POSA to apply the disclosures of Keiser II to the strength training apparatus in Verstegen. Accordingly, to the extent the display of power required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser II. *See* EX1003, ¶ 136.

B. Ground 2: Claims 4, 5, 7, 8, 15, 16, 17, 18, 27, 29, 48, and 59 are unpatentable under §103 over Verstegen in view of Keiser I and Keiser II and in further view of Lannon

1. Obviousness to a POSA

a. Motivation to Combine

A POSA would have been motivated to combine the disclosures of Verstegen, Keiser I, and Keiser II with Lannon because all four references relate to the same subject matter. As described above, Verstegen, Keiser I, and Keiser II all describe strength training machines that make it easier for a user to perform a customized workout routine for a variety of different strength training exercises; Lannon does so as well. EX1003, ¶ 221. Verstegen in particular describes an electronic control panel that provides a customized workout routine to a user and tracks and display the user's progress during a strength training exercise; so does Lannon. *Id.* Indeed, both Verstegen and Lannon observe similar problems emanating from the expense and inconvenience of using personal trainers to create workout routines for a user and track their progress. EX1005, ¶¶ 4-7, EX1008, 1:47-67. Both solve these problems by automating the personal training process via a software program that is configured to run on an electronic control panel. EX1003, ¶ 221. Both rely on common, general-purpose hardware components like processors, memory, and touch screens. *Id.* A POSA would therefore have

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considered these references analogous art and would have been motivated to combine their teachings. *Id.*

A POSA would readily recognize the benefits of modifying Verstegen's software to incorporate the relevant features from Lannon (in addition to the features already incorporated from Keiser I and Keiser II). *Id.*, ¶ 222. In particular, a POSA would recognize that storing user information and generating customized workout routines locally on the strength training apparatus (as opposed to on a separate device or server) simplifies the design of the device and reduces overall cost and complexity, particularly where a user is only interested in a customized workout routine for a single device. *Id.* A POSA would also recognize the benefit of incorporating aspects of Lannon's user interface, which provides the user with a lot of useful information about their workout history and fitness levels in a compact and aesthetically pleasing package. *Id.* A POSA would therefore be motivated to combine these systems. *Id.*

b. Reasonable Expectation of Success

A POSA would have a reasonable expectation of success in combining Verstegen, Keiser I and Keiser II with Lannon. EX1003, ¶ 223. As described in Section VIII(A)(1)(b) above, a POSA would have a reasonable expectation of success in combining Keiser I's relevant mechanical features and Keiser II's relevant control and display features with Verstegen's system. EX1003, ¶¶ 148-

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151. A POSA would further understand that, to implement Lannon’s disclosures in Verstegen’s system, a POSA need only program the existing software in Verstegen’s electronic control panel to perform the functions described in Lannon. *Id.*, ¶ 223. A POSA would understand that this would not require any significant technical modifications and could be done using known programming techniques. *Id.*

2. Claim 4

- a. [4.] The strength training apparatus of claim 1, wherein the processor and the memory are further configured to receive and store a physical fitness goal that is inputted by the user.**

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen describes “a method for training an athlete, operable on a digital system that includes a memory upon which is stored a [software] program.” EX1005, ¶ 11; *see also id.*, ¶ 28. “The athlete is queried regarding at least one goal the athlete seeks to achieve.” *Id.*, ¶ 11; *see also id.*, ¶¶ 23, 45. The profile information of the athlete, including the athlete’s goal, is saved in a “database.” *Id.*, ¶¶ 47, 52; *see also id.*, ¶ 53 (explaining that “the athlete’s goal” is “in the athlete profile”). The information in the database, including the goal, is used to generate a training plan, which is then used to set the operational parameters of the strength training apparatus via the control circuit 238. *Id.*, ¶¶ 29,

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35, 47, 53, Figs. 2, 6. Based on these disclosures, a POSA would recognize that the processor and memory of Verstegen’s electronic control panel are configured to receive and store a physical fitness goal that is inputted by the user. EX1003, ¶ 152.

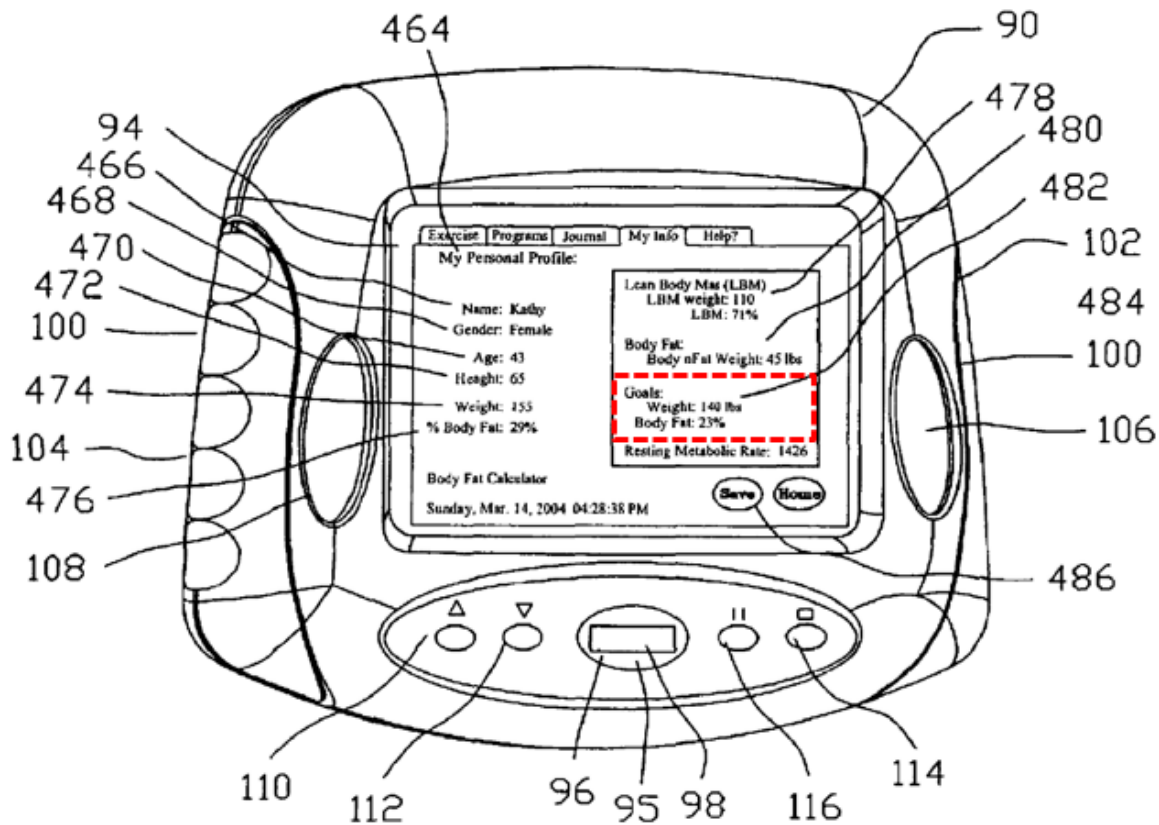
Lannon also discloses this limitation. Like Verstegen, Lannon describes a strength training apparatus with an electronic control panel that is designed to guide the user through a customized workout routine. *See, e.g.*, EX1008, 1:58-66, 11:41-46, 13:39-45, 14:50-55, 16:25-30. In particular, Lannon discloses a strength training apparatus with a “user interface module **90** [that] includes a liquid crystal touch screen display **94** for presenting visual data and inputting data.” *Id.*, 6:45-49. The “user interface module (UI) **90** contains a printed circuit board (PCB) **280** containing a central processing unit (CPU) **350**.” *Id.*, 11:34-36. “The PCB **280** also contains read only memory (ROM) **352** for storing software programs.” *Id.*, 11:39-41. Based on these disclosures, a POSA would recognize that Lannon discloses an electronic control panel (the UI **90**) that contains an electronic input and output device (the liquid crystal touch screen display **94**), a processor (the CPU **350**), and a memory (the ROM **352**). *See* EX1003, ¶ 153.

A POSA would also recognize that recognize that the processor and memory described in Lannon are configured to receive and store a physical fitness goal that is inputted by the user. EX1003, ¶ 154. Lannon discloses that the software

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program on the UI **90** “instruct[s] the operator **12** thru [sic] an interactive exercise program that monitors the operator’s exercise program progress, provides exercise tips, records the operator’s personal data and fitness program results and exports the operator’s data to a memory storage **96**.” EX1008, 11:41-46. Lannon discloses that before using the exercise equipment, “the operator **12** is preferably required to enter data into a computer for designing an individual exercising program,” which “may be entered by utilizing the user interface **90**.” *Id.*, 16:25-29. The data may include the operator’s personal information, including the user’s “goals **482**.” *Id.*, 16:13-19. For example, as depicted in Figure 41, the user may have a goal weight of 140 lbs and 23% body fat:

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Id., Fig. 41 (annotated). Based on these disclosures, a POSA would recognize that the processor and memory of Lannon’s electronic control panel are “configured to receive and store a physical fitness goal that is inputted by the user.” EX1003, ¶ 154.

For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Lannon to the electronic control panel in Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II). Accordingly, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been

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obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon. *See* EX1003, ¶¶ 155, 220-223.

3. Claim 5

- a. [5.] The strength training apparatus of claim 4, wherein the processor and the memory are further configured to provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal.**

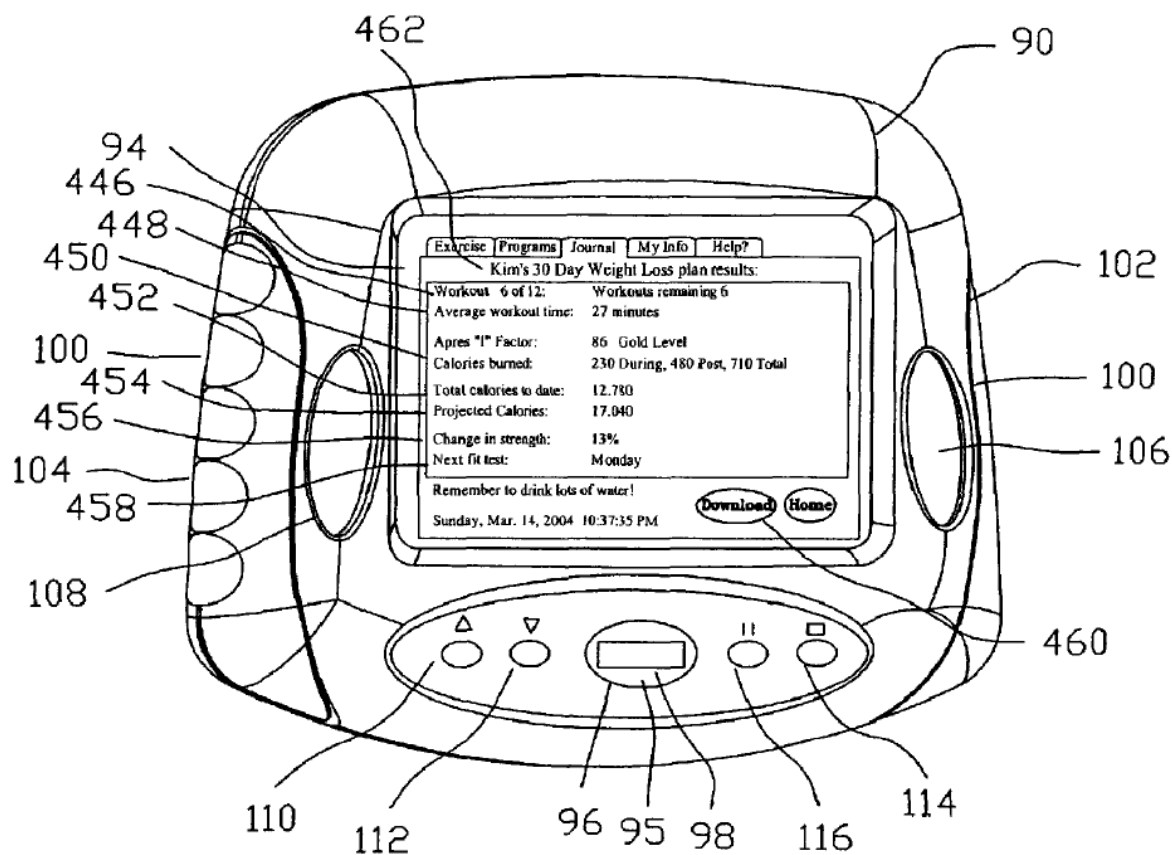
Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen describes that “[b]ased on the goal and the physical state of the athlete the expert system will generate [a] prescription, which sets forth a schedule of when each of a plurality of exercise sessions is to occur and which training activities are to occur during each session.” EX1005, ¶ 25; *see also id.*, ¶ 53 (explaining that the prescription is created based on “business logic includ[ing]: the athlete’s goal”); *id.*, ¶¶ 29, 35 (explaining that the prescription information is sent to the control circuit **238**). Based on these disclosures, a POSA would recognize that the processor and the memory of the control circuit **238** are “configured to provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal.” EX1003, ¶ 156.

Lannon also discloses this limitation. Lannon discloses that the user provides inputs to the strength training apparatus “utilizing the user interface **90**,”

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EX1008, 16:28-29, “for designing an individual exercising program,”*id.*, 16:25-28.

“The instructions may include the type of exercises to engage in, the number [of] exercises to engage in, the number of positive and negative loading motions, the load amount to be displaced, the range of movement **309**, the speed of program pace bar **314** and the time between exercising sets.” *Id.*, 17:55-59. For example, to help a user achieve a weight loss goal, the UI **90** is configured to provide “an exercising schedule including a 30 day weight loss plan for the operator **12**.” *Id.*, 16:10-12.



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Id., Fig. 40. Based on these disclosures, a POSA would recognize that the processor and the memory of the UI **90** are “configured to provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal.” EX1003, ¶ 157.

For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Lannon to the electronic control panel in Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II). Accordingly, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon. *See* EX1003, ¶¶ 159, 220-223.

4. Claim 7

- a. [7.] The strength training apparatus of claim 4, wherein the processor and the memory are further configured to track progress of the user toward completing the stored physical fitness goal.**

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen describes that “[a]s an exercise progresses, the exercise machine measures and records information about the athlete’s progress and provides feedback to the server.” EX1005, ¶ 31. In particular, the “control circuit **238** is configured to . . . receive performance data”

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from the strength training apparatus. *Id.*, ¶ 35. The “data about the athlete’s performance” is then transmitted and stored in the database, *id.*, ¶ 49, including “the results of past performance,” *id.*, ¶ 54. For example, the data may include the “achievement of past prescriptions” such as the “percent of peak power” achieved by the user during the strength workout. *Id.*, ¶ 53; *see also id.*, ¶ 43. The data may also include the number of movements the user has achieved out of a target number of movements. *Id.*, Fig. 4, ¶ 43. The data regarding the athlete’s progress and performance during the training session may then be used to “reevaluate the prescription and revise it to reflect the new information.” *Id.*, ¶ 26. Based on these express disclosures, a POSA would recognize that Verstegen discloses that its processor and memory are “further configured to track progress of the user toward completing the stored fitness goal.” EX1003, ¶ 160.

Lannon also discloses this limitation. Lannon discloses that the UI **90** is configured to run software “that monitors the operator’s exercise program progress . . . [and] records the operator’s personal data and fitness program results” EX1008, 11:41-46. “For example, the electronic program may monitor and illustrate on the user interface **90** the range of movement, strength, weight, heart rate, body fat index, the type of exercises conducted, the number of positive and negative loading motions,” etc. *Id.*, 17:62-66. Based on these disclosures, a POSA would recognize that Lannon discloses that its processor and memory are “further

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configured to track progress of the user toward completing the stored fitness goal.”

EX1003, ¶ 161.

For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Lannon to the electronic control panel in Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II). Accordingly, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon. *See* EX1003, ¶¶ 163, 220-223.

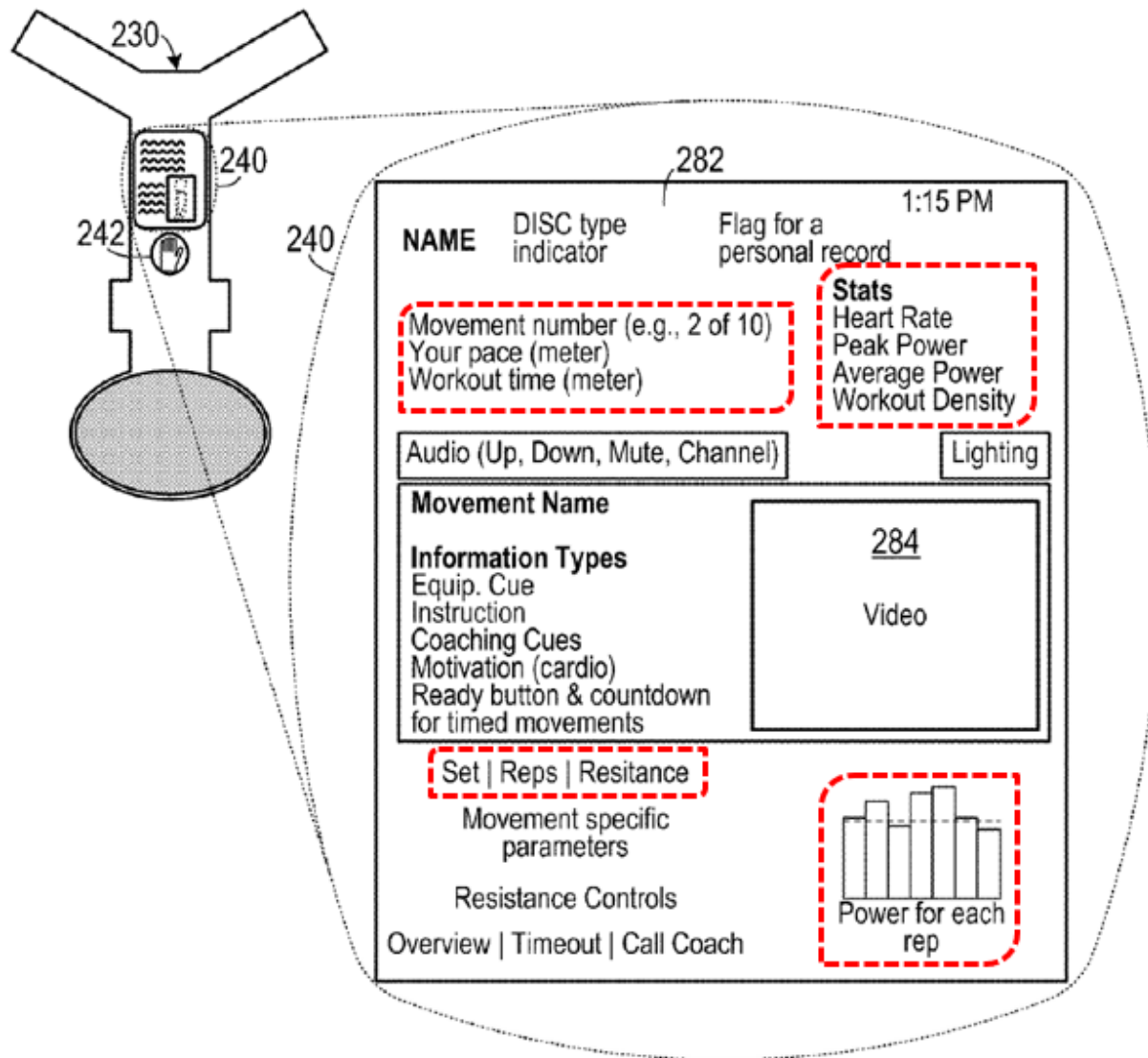
5. Claim 8

- a. **[8.] The strength training apparatus of claim 4, wherein the processor and the memory are further configured to display on the electronic output device a progress of the user toward completing the stored physical fitness goal.**

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. During the workout, the screen **282** of the audiovisual user interface **236** displays metrics related to the progress of the user toward completing a particular fitness goal. EX1005, ¶ 43. For example, as depicted below, the screen **282** includes “such information as: which movement out of the total movements assigned that the athlete is currently working on, the athlete’s metabolic state, movement specific parameters and average power exerted

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by the athlete (including a histogram showing the power exerted in each repetition).” *Id.*



Id., Fig. 4 (annotated). Based on these disclosures, a POSA would understand that the electronic control panel is configured to displays metrics related to the progress of the user toward completing a particular fitness goal, including a goal for number of movements, a goal for pace or time, and/or a power goal. EX1003, ¶¶ 164-165.

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Lannon also discloses this limitation. Lannon describes that the UI **90** is configured to run software “that monitors the operator’s exercise program progress . . . [and] records the operator’s personal data and fitness program results” EX1008, 11:41-46. The “touch screen display **94** display[s] an exercise menu **378**” that “includes a target indicator **382** for disclosing an exercise parameter to be reached.” *Id.*, 14:48-55. In addition, “[t]he processor may generate and display performance data based on the range of movement, strength, weight, heart rate, body fat index, the type of exercises conducted, the number [of] exercises conducted,” etc. *Id.*, 18:03-11. Based on these disclosures, a POSA would recognize that Lannon’s electronic control panel displays the user’s progress toward the stored physical fitness goal. EX1003, ¶ 166.

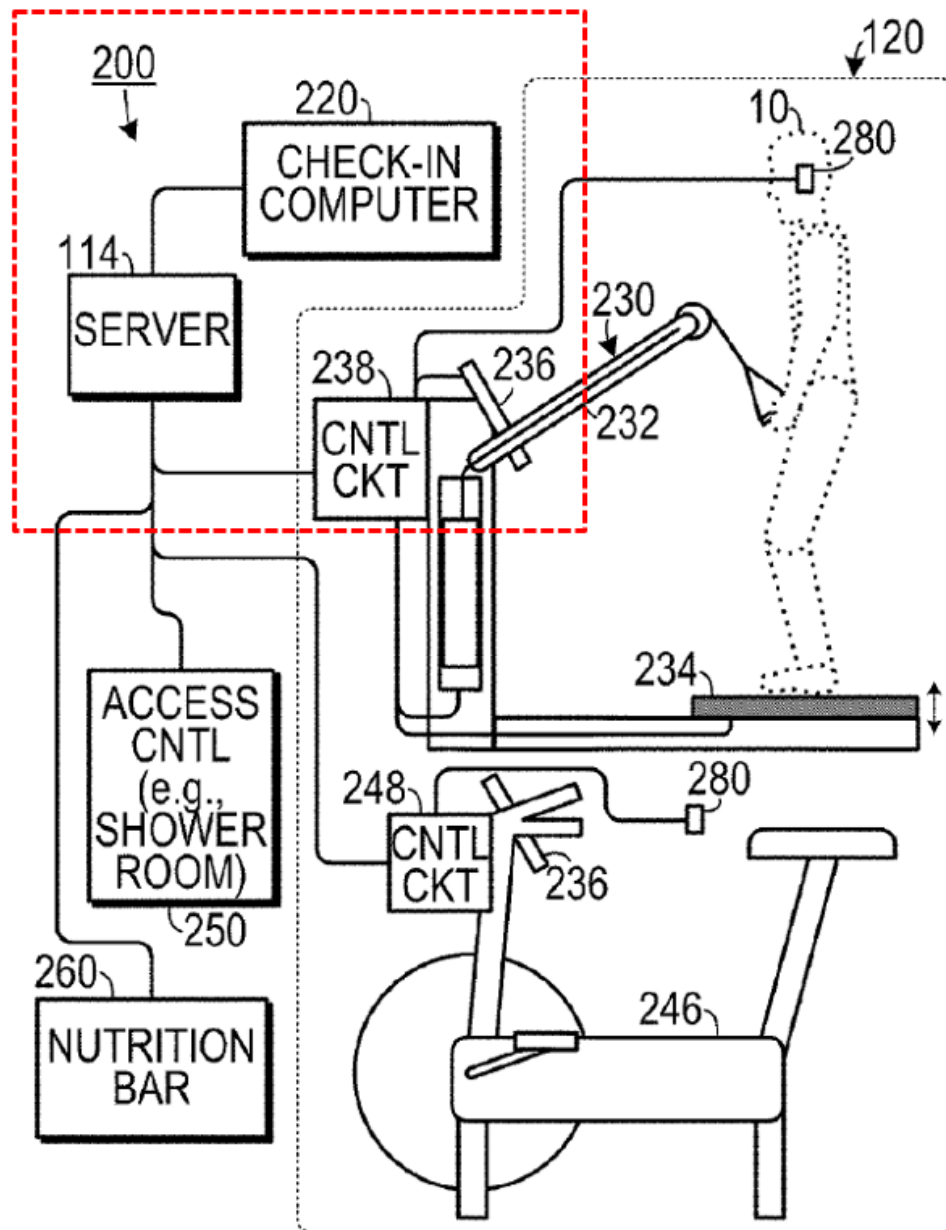
For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Lannon to the electronic control panel in Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II). Accordingly, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon. *See* EX1003, ¶¶ 167, 220-223.

6. Claim 15

- a. [15.] The strength training apparatus of claim 1, wherein the electronic control panel further includes a connection for communication with another device.**

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen discloses that the electronic control panel contains a “control circuit **238** (which might include a local processor and associated circuitry) that is in communication with the server **114**.” EX1005, ¶ 35. “The server **114** is in communication with a plurality of devices, such as a touch screen and a [check-in] computer **220**” *Id.*, ¶ 34. The check-in computer is a remote computer that the user “checks in” with when he or she arrives for a training session, and accordingly is “another device.” *Id.*, ¶ 49.

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Id., Fig. 2 (annotated). In addition, “[t]he server is in communication with the Internet so that the athlete can log on to his account remotely,” such as via a smartphone. *Id.*, ¶ 32. A POSA would therefore understand that Verstegen’s electronic control panel is connected for communication with several other devices

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including: (1) the server; (2) the check-in computer; and (3) the user's smartphone. EX1003, ¶¶ 168-169.

Lannon also discloses this limitation. Lannon describes that the processor of the UI 90 “preferably causes both the operator's customized electronic program and performance data to be stored in an electronic media **96**.” EX1008, 18:12-14. “[T]he electronic media may include a *network electronic storage device 120 linked to the processor through an electronic wireless link 122*.” *Id.*, 18:16-18 (emphasis added).

Additionally, Lannon discloses that “a data transfer device **1110**” transmits and receives the exercise performance data from the strength training machine. *Id.*, 18:35-49; 18:52-54. Lannon further discloses that “[a] local link **1118** electrically couples the data transfer device **1110** and [a] local computer **1114**.” The “local computer **1114**” may be an electronic kiosk or personal computer. *Id.*, 18:56-58. Lannon discloses that the local computer is also linked to a “remote computer **1120**,” which may be in direct communication with the “data transfer device **1110**” via a “wireless local link **1550**.” *Id.*, 18:63-67. The wireless link “may include a wireless local area network [] such as Wi-Fi or other wireless local area network.” *Id.*, 18:67-19:02. Based on these disclosures, a POSA would understand that Lannon discloses that its electronic control panel is connected for communication with several other devices including: (1) external storage; (2) a local computer

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(e.g., a kiosk or personal computer); and/or (3) a remote computer. EX1003, ¶ 171.

For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Lannon to the electronic control panel in Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II). Accordingly, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon. *See* EX1003, ¶¶ 172, 220-223.

7. Claim 16

- a. [16.] The strength training apparatus of claim 15, wherein the connection includes a radio communication link.**

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen discloses that the electronic control panel contains a “control circuit **238** (which might include a local processor and associated circuitry) that is in communication with the server **114**.” EX1005, ¶ 35. “The server **114** is in communication with a plurality of devices, such as a touch screen and a [check-in] computer **220**,” *Id.*, ¶ 34, and is also “in communication with the Internet,” *Id.*, ¶ 32. Verstegen further discloses that “[w]hen the athlete reports for a training session, he checks in at [the] check-in computer” *Id.*, ¶

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29. “The check in can include an initial identification through, for example: . . .

RFID or the sensing of a near field communication chip in a cell phone, etc.” *Id.*

A POSA would understand that RFID is short for “radio frequency identification,” which is a type of “radio communication link” between devices. EX1003, ¶¶ 175-176. A POSA would further understand that “a near field communication chip,” or NFC chip, is a chip that enables near field radio communication between devices, and is thus another type of “radio communication link.” *Id.*, ¶ 176. Based on these disclosures, a POSA would recognize that the connections between the electronic control panel and other devices described in Verstegen may include a radio communication link, in the form of at least the described RFID and/or NFC connections between the cell phone and the check-in computer, which is also connected to the electronic control panel. *Id.*

In addition to Verstegen’s explicit disclosure of RFID and near field communication (“NFC”) chips in cell phones, a POSA would understand that the control circuit **238** would also generally be connected to the server **114** and the check-in computer **220** via a radio communication link. *Id.*, ¶ 176. As is understood in the art, two of the most common ways to connect these devices would be: (1) through a local wireless internet connection, such as WiFi; or (2) through other types of wireless technology, like NFC, RFID, or Bluetooth. *Id.* WiFi, NFC, RFID, and Bluetooth all use radio signals to transmit data to and from

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separate devices, and are thus radio communication links. *Id.* A POSA would be motivated to use such wireless communication technology so as to reduce the tripping hazard or aesthetic drawbacks of a wired connection. *Id.*

Lannon also discloses this limitation. Lannon describes that its electronic control panel is coupled to the external storage, local computer, and/or remote computer, via a “wireless link.” EX1008, 18:16-18; 18:35-54; 18:63-67. The wireless link “may include a wireless local area network [] such as Wi-Fi or other wireless local area network.” *Id.*, 18:67-19:02. WiFi uses radio signals to transmit data between devices, thus establishing a “radio communication link.” EX1003, ¶ 177. A POSA would therefore recognize that the electronic control panel described in Lannon is connected to the external storage, a local computer, and/or a remote computer, via a radio communication link. *Id.*

For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Lannon to the electronic control panel in Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II). Accordingly, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon. *See* EX1003, ¶¶ 178, 220-223.

8. Claim 17

- a. [17.] The strength training apparatus of claim 15, further comprising an application program configured to be loaded on the other device.**

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen discloses that the user accesses the digital system by entering personal identification information at a “check-in computer” in the training facility “or at a remote computer” in a separate location, such as in a hotel fitness center while the user is traveling. EX1005, ¶ 45; *see also id.* ¶ 32. On either device, a software application “updates the athlete’s prescription, generates a revised training program for the current session and presents an overview **314** of the current session to the athlete.” *Id.*, ¶ 45; *see also id.* at ¶ 52; EX1003, ¶ 179. Based on these disclosures, a POSA would recognize that Verstegen discloses “an application program” that is configured to be loaded on both: (1) the check-in computer and (2) the remote computer. *Id.*

Lannon also discloses this limitation. Lannon discloses that the “local computer **1114**” could be an electronic kiosk or personal computer. EX1008, 18:56-58. The local computer “includes an application program that processes the exercise performance data **1142 . . .**” EX1008, 20:14-18. Based on these disclosures, a POSA would recognize that Lannon discloses “an application program” that is configured to be loaded on the local computer. EX1003, ¶ 180.

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For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Lannon to Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II). Accordingly, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon. *See* EX1003, ¶¶ 181, 220-223.

9. Claim 18

a. [18.P] The strength training apparatus of claim 17, wherein the application program is configured to:

As discussed in Ground 1 limitation [1.P] and Ground 2 limitation [17.], Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II) discloses this limitation. EX1003 ¶¶ 182-183, 220-223.

b. [18.1] display information regarding past workout routines performed by the user on the strength training apparatus;

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen discloses that “the athlete **10** can interact with the system **400** through a remote Web site” on the remote computer or alternatively at the “check-in computer.” EX1005, ¶ 47. The system stores information about the athlete including “the athlete’s goal . . . the achievement of

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past prescriptions . . . the athlete’s past attendance record . . . [and] the athlete’s current state(s) in activity progressions” *Id.*, ¶ 53. The system also “holds the prescription information for each athlete in the system, including prescriptions created for future use and the results of past performance.” *Id.*, ¶ 54.

All of this information is provided to a “rendering engine **536**,” which “creates a presentation layer according to specific output.” *Id.*, ¶ 55. Verstegen discloses that “[t]he rendering engine **536** will generate output in several different formats, including: . . . an HTML or XML format **542** for transmission to a partner Web site **552**; a portable document format (PDF) **544** for remote downloading by the athlete; a personal storage device format **546** (e.g., the iPOD format) for use by the athlete while traveling, and any other format **548** that could be needed by the athlete.” *Id.*, ¶ 55. For example, the athlete may be “given a summary of the training session” at the check-in computer or at the remote computer. *Id.*, ¶ 45. Based on these disclosures, a POSA would recognize that the application programs loaded on the check-in computer and/or the remote computer are configured to “display information regarding past workout routines performed by the user on the strength training apparatus.” EX1003, ¶ 185.

- c. **[18.2] display a schedule of customized workout routines for the strength training apparatus based on**

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a stored physical fitness goal that was inputted by the user; and

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen describes that “[t]he athlete is queried regarding at least one goal the athlete seeks to achieve.” EX1005, ¶ 11. The digital system “generate[s] a training prescription, based on the goal and physical state of the athlete.” *Id.*, ¶ 11.

Verstegen discloses that “[t]he prescription sets forth a schedule of when each of a plurality of exercise sessions is to occur and which exercise activities are to occur during each session.” *Id.*, ¶ 11. The athlete accesses the digital system by entering personal identification information “at the check-in computer or at a remote computer.” *Id.*, ¶ 45. The system “updates the athlete’s prescription, generates a revised training program for the current session and presents an overview **314** of the current session to the athlete.” *Id.*, ¶ 45. Based on these disclosures, a POSA would recognize that the application program is configured to “display a schedule of customized workout routines for the strength training apparatus based on a stored physical fitness goal that was inputted by the user.” EX1003, ¶ 187.

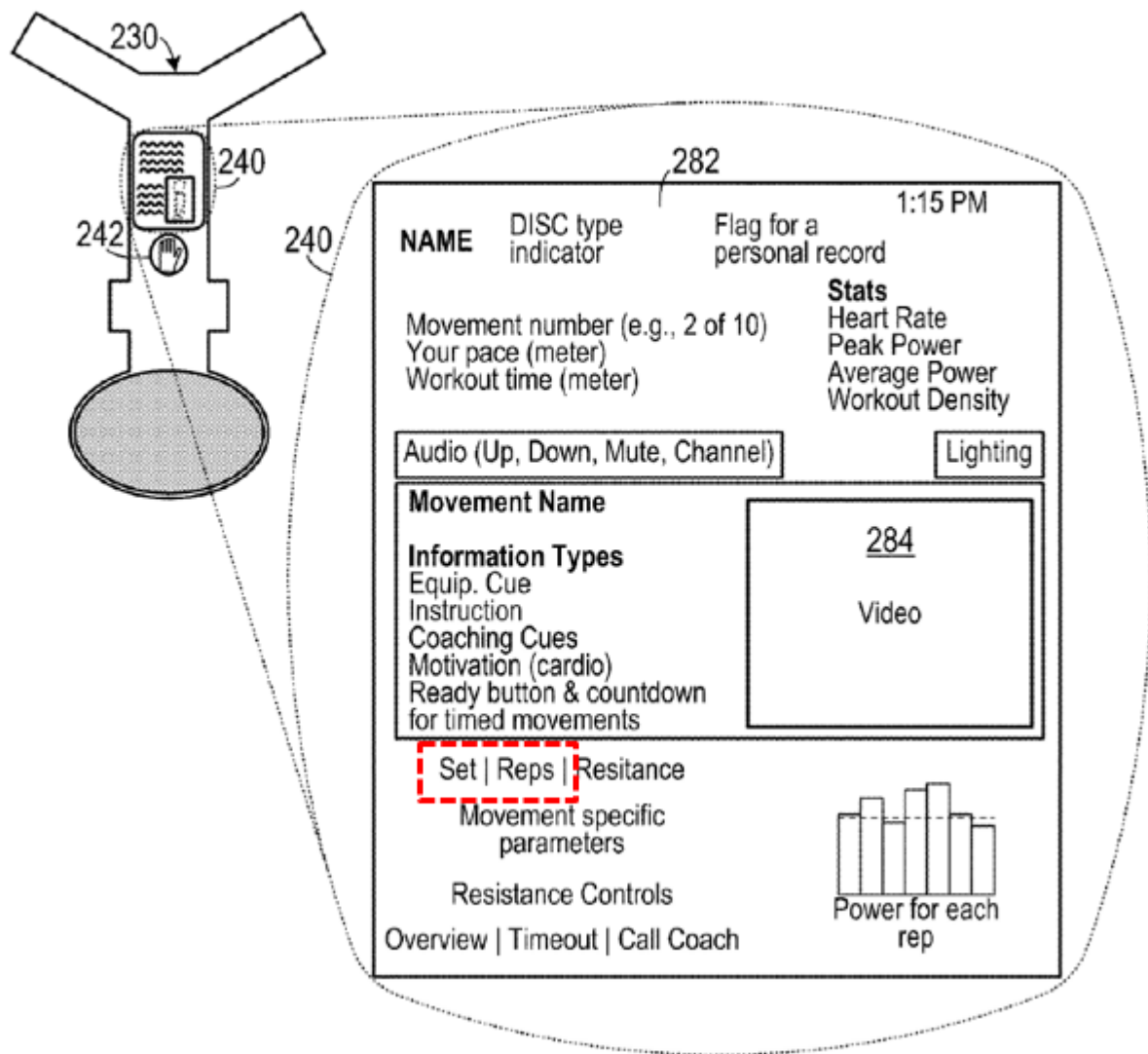
- d. [18.3] generate a custom workout routine for the strength training apparatus that includes sets and**

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repetitions of an exercise that involves pulling on the first cable and/or the second cable.

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. As described in Ground 1 limitations [1.P] to [1.3], Verstegen, or Verstegen in combination with Keiser I, discloses a strength training apparatus in which a user performs exercises by pulling on a first cable and/or a second cable. Verstegen describes that the system “generate[s] a training prescription for the athlete, and guides the athlete through a plurality of training sessions according to the prescription.” EX1005, ¶ 22. The system “sets operating parameters and on exercise equipment and receives data regarding the training sessions to monitor compliance with the prescription” *Id.*, ¶ 22. This data may include “number of repetitions,” *id.*, ¶ 22, and, as depicted in Figure 4, number of sets.

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Id., Fig. 4 (annotated).

A POSA would understand Verstegen’s disclosures to mean that the custom workout that is being “monitored” may include a target number of repetitions or sets to be achieved by the user pulling on the cable(s). EX1003, ¶¶ 190-191. Based on these disclosures, a POSA would recognize that the application program is configured to “generate a custom workout routine for the strength training

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apparatus that includes sets and repetitions of an exercise that involves pulling on the first cable/and or the second cable.” *Id.*, ¶190.

Even if Verstegen did not explicitly disclose that the customized workout routine includes sets and repetitions, it would have been obvious to a POSA to include these parameters. Sets, repetitions, and resistance are the three basic metrics of a strength training workout, included in virtually all strength training routines. *Id.*, ¶ 191; *see also* EX1007, 2:26-30 (“In a conventional training regimen, the user maintains a written log of the exercises performed on a given date, including, for example, . . . the number of sets performed and the number of repetitions per set.”). It would therefore have been obvious to a POSA to include a target number of sets and repetitions in the customized workout routine. EX1003, ¶ 191. It would have been especially obvious in view of the disclosures of Keiser II, which, like Verstegen, teaches the tracking and display of sets and repetitions in a strength training device that uses pneumatic air resistance. EX1007, 14:45-56; *see also* EX1003, ¶ 192.

10. Claim 27

- a. **[27.] The strength training apparatus of claim 25, wherein the processor and the memory are further configured to receive and store a physical fitness goal**

that is inputted by the user via the electronic input device.

As discussed in Ground 2 limitation [4.] (and in conjunction with Ground 1 claim 25), Verstegen (alone or in combination with Keiser I and/or II) discloses this limitation. EX1003 ¶ 193.

11. Claim 29

- a. [29.] The strength training apparatus of claim 27, wherein the processor and the memory are further configured to generate a schedule of upcoming customized workout routines for the strength training apparatus based on the stored physical fitness goal.**

As discussed in Ground 2 limitation [5.], Verstegen (alone or in combination with Keiser I and/or II) discloses this limitation. In particular, Verstegen discloses that “[b]ased on the goal and the physical state of the athlete the expert system will generate [a] prescription, which sets forth a schedule of when each of a plurality of exercise sessions is to occur and which training activities are to occur during each session.” EX1005, ¶ 25. Based on this disclosure, a POSA would recognize that the processor and the memory of the electronic control panel are “configured to generate a schedule of upcoming customized workout routine for the strength training apparatus based on the stored physical fitness goal.” EX1003, ¶¶ 194-195. In addition, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been

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obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon for the reasons discussed in Ground 2 limitation [5.]. *Id.*, ¶¶ 196, 220-223.

12. Claim 48

a. [48.P] A strength training apparatus comprising:

As discussed in Ground 1 limitation [1.P], Verstegen discloses this limitation. EX1003 ¶ 197.

b. [48.1] a first arm and a second arm each being configured to be selectively pivoted independent of each other to be selectively positioned at multiple angles relative to each other;

As discussed in Ground 1 limitation [1.1], Verstegen alone or in combination with Keiser I discloses this limitation. EX1003 ¶¶ 198-200.

c. [48.2] a first pulley coupled to an end of the first arm; a first cable extending through the first arm and the first pulley; a second pulley coupled to an end of the second arm; a second cable extending through the second arm and the second pulley; and

As discussed in Ground 1 limitation [1.2], Verstegen alone or in combination with Keiser I discloses this limitation. EX1003 ¶¶ 201-203.

d. [48.3] an electronic control panel configured to allow for multiple levels of resistance to a user pulling on the first cable and/or the second cable, the electronic control panel including: a processor and a memory configured to control a current level of resistance,

As discussed in Ground 1 limitation [1.3], Verstegen alone or in combination with Keiser II discloses this limitation. EX1003 ¶¶ 204-206.

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- e. **[48.4] the processor and the memory further configured to receive and store a physical fitness goal that is inputted by the user,**

As discussed in Ground 2 limitation [4.], Verstegen alone or in combination with Keiser I, Keiser II, and/or Lannon, discloses this limitation. EX1003 ¶¶ 207-208.

- f. **[48.5] the processor and the memory further configured to provide a customized workout routine for the strength training apparatus based on the stored physical fitness goal,**

As discussed in Ground 2 limitation [5.], Verstegen alone or in combination with Keiser I, Keiser II, and/or Lannon discloses this limitation. EX1003 ¶¶ 209-210.

- g. **[48.6] an electronic input device configured to allow the user to set the current level of resistance, and**

As discussed in Ground 1 limitation [1.4], Verstegen alone or in combination with Keiser II discloses this limitation. EX1003 ¶¶ 211-212.

- h. **[48.7] an electronic output device configured to display the current level of resistance.**

As discussed in Ground 1 limitation [1.5], Verstegen alone or in combination with Keiser II discloses this limitation. EX1003 ¶¶ 213-214.

13. Claim 59

- a. **[59.] The strength training apparatus of claim 48, wherein the processor and the memory are further configured to receive from the user, and store, an age**

of the user, a height of the user, and a weight of the user.

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen describes that, in order to generate the customized workout routine for the user, “[v]arious biometric measurements are measured from the athlete, including such things as: height, weight, body composition (i.e., body fat, lean body mass, etc.)” as well as a “baseline metabolic measurement indicative of the athlete’s current physical state.” EX1005, ¶ 24.

A POSA would have understood that age, in addition to height and weight, would be an essential biometric measurement to include in developing an exercise routine for a user. EX1003, ¶ 216. A POSA would further understand that age is a factor that is commonly used in calculating or assessing body composition and metabolic measurements. *Id.* A POSA would therefore recognize that the processor and memory of Verstegen’s electronic control panel, via the customized workout routine that it executes, is “configured to receive from the user, and store, an age of the user, a height of the user, and a weight of the user.” *Id.*

Moreover, even if Verstegen did not explicitly disclose this limitation, it would have been obvious to a POSA to implement this functionality into Verstegen’s electronic control panel. A POSA would understand that age, height, and weight are critical factors in designing a physical fitness routine for a

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particular user. *Id.*, ¶ 217. These metrics affect the way a user’s body functions, as well as their physical composition, strength, endurance, and energy. *Id.* A POSA would therefore have been motivated to include and consider these metrics in the creation of the customized workout routine for the user, and as explained in Section VIII(A)(1), have the electronic control panel itself receive and store this data. *Id.*

Lannon also discloses this limitation. Lannon describes that the UI 90 stores and displays “the operator’s personal profile including . . . age **470**, height **472**, weight **474**” EX1008, 16:13-22; *see also* 16:33-66.

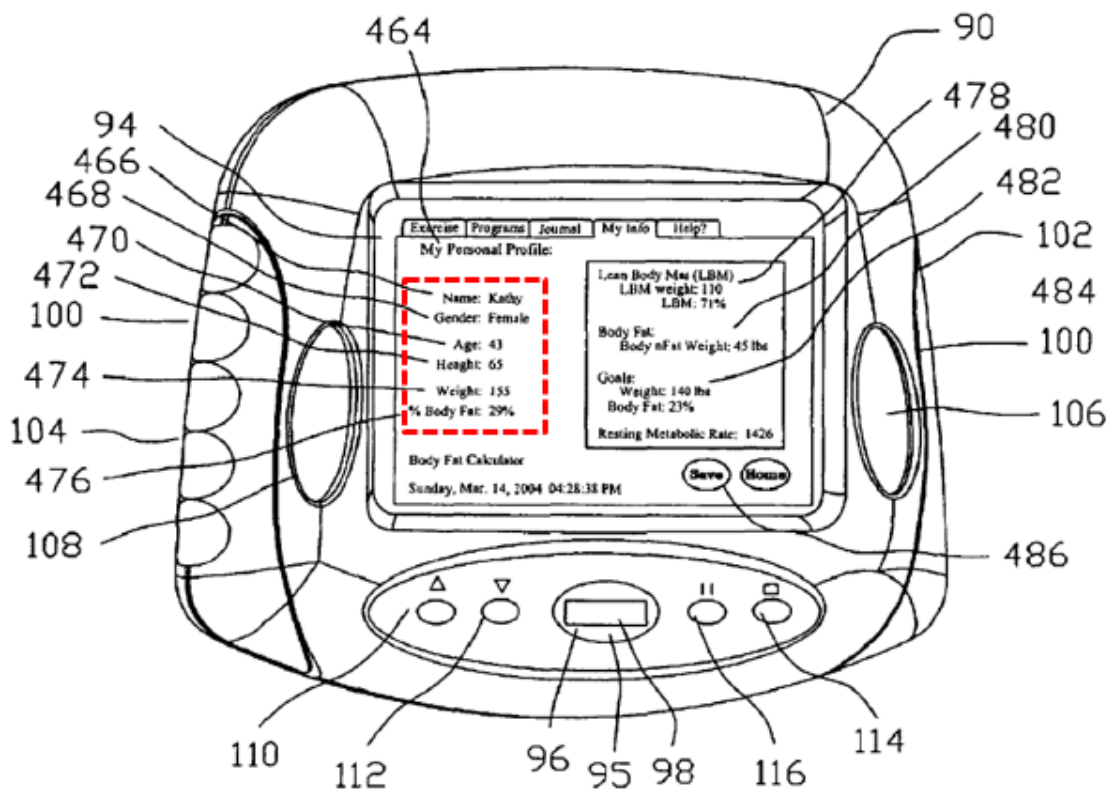


FIG. 41

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Id., Fig. 41 (annotated). Based on this disclosure, a POSA would recognize that the processor and the memory of the electronic control panel are “configured to receive from the user, and store, an age of the user, a height of the user, and a weight of the user.” EX1003, ¶ 216.

For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Lannon to the electronic control panel in Verstegen (alone or in combination with the relevant disclosures of Keiser I and/or II). Accordingly, to the extent the functionality required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I, Keiser II, and/or Lannon. *See* EX1003, ¶¶ 220-223.

IX. SECONDARY CONSIDERATIONS

Petitioner is unaware of any secondary considerations that may support the patentability of the challenged claims of the '268 patent set forth above. *Id.*, ¶ 208. Petitioner reserves the right to respond to any allegations of secondary considerations that may be asserted by Patent Owner in this proceeding.

X. MANDATORY NOTICES (37 C.F.R. §42.8)

A. Real Party-In-Interest

The real party-in-interest for this petition is Tonal Systems, Inc.

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B. Related Matters

The '268 patent is currently the subject of *iFIT Inc. v. Tonal Systems, Inc.*, No. 1:21-cv-00652 (D. Del.), which has been consolidated with *Tonal Systems, Inc. v. iFIT, Inc.*, Case No. 1:20-cv-01197-VAC-CJB (D. Del.).

C. Lead and Back-Up Counsel and Service Information

Petitioner hereby designates lead and back-up counsel as follows:

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Pursuant to 37 C.F.R. §42.10(b), a Power of Attorney has been filed herewith. Service via hand delivery or postal mail may be made at the addresses of the lead and backup counsel above. Petitioner consents to electronic mail service at the email addresses above. Petitioner will request authorization to file motions for Bethany D. Bengfort and Nari E.C. Ely to appear *pro hac vice* at the appropriate time.

XI. PAYMENT OF FEES (37 C.F.R. §§42.15(a) & 42.103)

The required fees are submitted herewith in accordance with 37 C.F.R. §§41.25(a) and 42.103(a).

XII. GROUNDS FOR STANDING (37 C.F.R. §§42.101, 42.104, & 42.108)

Petitioner certifies that the patent for which review is sought is available for *inter partes* review and that the Petitioner is not barred or estopped from requesting

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an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

XIII. CONCLUSION

Petitioner has demonstrated a reasonable likelihood that the challenged claims are obvious and therefore trial should be instituted.

Dated: May 5, 2022

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24, the undersigned attorney for the Petitioner declares that the argument section of this Petition (Sections I–IX, XIII) has a total of 13,936 words, according to the word count tool in Microsoft Word™.

Dated: May 5, 2022

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(a), the undersigned hereby certifies that true and correct copies of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 10,953,268, including all exhibits, and related documents are being served on May 5, 2022 via Federal Express to the correspondence address of record for the Patent Owner:

ICON Health & Fitness, Inc.
1500 South 1000 West
Logan, UT 84321

And, via electronic email upon counsel of record for Patent Owner in the litigation pending before the U.S. District Court of Delaware entitled *Tonal Systems, Inc. v. iFIT, Inc.*, Case No. 1:20-cv-01197-VAC-CJB as follows:

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of U.S. Patent No. 10,953,268*

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EXHIBIT 20

*Petition for Inter Partes Review
of U.S. Patent No. 10,967,214*

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

Tonal Systems, Inc.,
Petitioner,

v.

iFIT, Inc.,
Patent Owner.

Case No. IPR2022-00955

U.S. Patent No. 10,967,214
Issue Date: April 6, 2021

**PETITION FOR INTER PARTES REVIEW OF
U.S. PATENT NO. 10,967,214**

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f.	[51.5] and electronically receive input from the user to play an audiovisual program, and play the audiovisual program for the user.	57
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c.	[26.2] and an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable.....	73
d.	[26.3] electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable,.....	73
e.	[26.4] electronically present the adjusted level of resistance to the user,.....	74
f.	[26.5] and electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of a workout.	74
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a.	[36.] The cable exercise machine of claim 26, wherein: the cable exercise machine further comprises a first vertical guide; the first pulley is movable along a length of the first vertical guide; the cable exercise machine further comprises a second vertical guide; and the second pulley is movable along a length of the second vertical guide.	74
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a.	[37.] The cable exercise machine of claim 36, wherein: the first pulley is movable along the length of the first vertical guide to customize the workout for a height of the user; and the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user.	74
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b.	[51.1] a first pull cable routed through a first pulley; a second pull cable routed through a second pulley;.....	75
c.	[51.2] and an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable,.....	76
d.	[51.3] electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable,.....	78
e.	[51.4] electronically present the adjusted level of resistance to the user,.....	78

f.	[51.5] and electronically receive input from the user to play an audiovisual program, and play the audiovisual program for the user.	79
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a.	[54.] The cable exercise machine of claim 51, wherein the electronic control panel is further configured to: electronically receive input from the user to execute a pre-programmed workout; and electronically execute the pre-programmed workout for the user.....	80
3.	Claim 59	80
a.	[59.] The cable exercise machine of claim 51, wherein: the cable exercise machine further comprises a frame; the first pulley is supported by the frame; and the second pulley is supported by the frame.	80
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a.	[63.] The cable exercise machine of claim 51, wherein: the cable exercise machine further comprises a first vertical guide; the first pulley is movable along a length of the first vertical guide; the cable exercise machine further comprises a second vertical guide; and the second pulley is movable along a length of the second vertical guide.	84
3.	Claim 64	87

a.	[64.] The cable exercise machine of claim 63, wherein: the first pulley is movable along the length of the first vertical guide to customize a workout for a height of the user; and the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user.	87
4.	Claim 65	88
a.	[65.] The cable exercise machine of claim 64, wherein: the first pulley is movable along the length of the first vertical guide to customize a workout for a desired target muscle group of the user; and the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user.	88
5.	Claim 66	88
a.	[66.] The cable exercise machine of claim 64, wherein: the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine; and the second vertical guide extends from an upper right location of the cable exercise machine to a lower right location of the cable exercise machine.....	88
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TABLE OF EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No. 10,967,214 (the “214 patent”)
1002	File History of U.S. Patent No. 10,967,214
1003	Declaration of Harvey C. Voris (“Voris Decl.”)
1004	Curriculum Vitae of Harvey C. Voris
1005	U.S. Patent App. Pub. No. 2009/0269728 A1 (“Verstegen”)
1006	U.S. Patent No. 7,995,235 B2 (“Keiser I”)
1007	U.S. Patent No. 8,052,584 (“Keiser II”)
1008	U.S. Patent No. 5,747,688 (“Krementsov”)
1009	KR Patent No. 10-1112709 (translated) and Translator’s Declaration (“Lim”)
1010	U.S. Patent App. Pub. No. 2013/0296144 A1 (“Gvoich”)
1011	IDS excerpts of U.S. Patent No. 10,188,890
1012	KR Patent No. 10-1112709 (“Lim”) (original)

*Petition for Inter Partes Review
of U.S. Patent No. 10,967,214*

I. INTRODUCTION

The purported invention reflected in claims 1, 6, 7, 15-18, 21, 26, 36, 37, 51, 54, 59, and 63-66 (the “challenged claims”) of the ’214 patent is an “energy tracking device incorporated into a cable exercise machine” that enables a user to track the amount of calories burned and work performed during a workout. EX1001, 12:20-58. More specifically, the challenged claims are directed to a cable machine with adjustable pulleys, the resistance of which can be varied using an electronic control panel. But none of the claimed elements were new, alone or in combination as claimed, before the December 26, 2013 priority date of the ’214 patent. Therefore, for the reasons described in detail below, Petitioner has shown that there is a reasonable likelihood that at least one challenged claim is obvious in view of the cited prior art and *inter partes* review should be instituted.

II. BACKGROUND TECHNOLOGY

A. Cable Machines

Cable exercise machines (“cable machines”) are devices that permit a user to perform strength training exercises by transmitting force to a cable that is connected to a resistance mechanism, often via pulleys. EX1003, ¶ 37. Jack Lalanne is credited with inventing the modern cable machine in the early 1950’s, leading to a cable machine craze in the 1970’s. EX1003, ¶ 38. By the 2000’s, cable machines were commonplace in gyms. EX1003, ¶ 39.

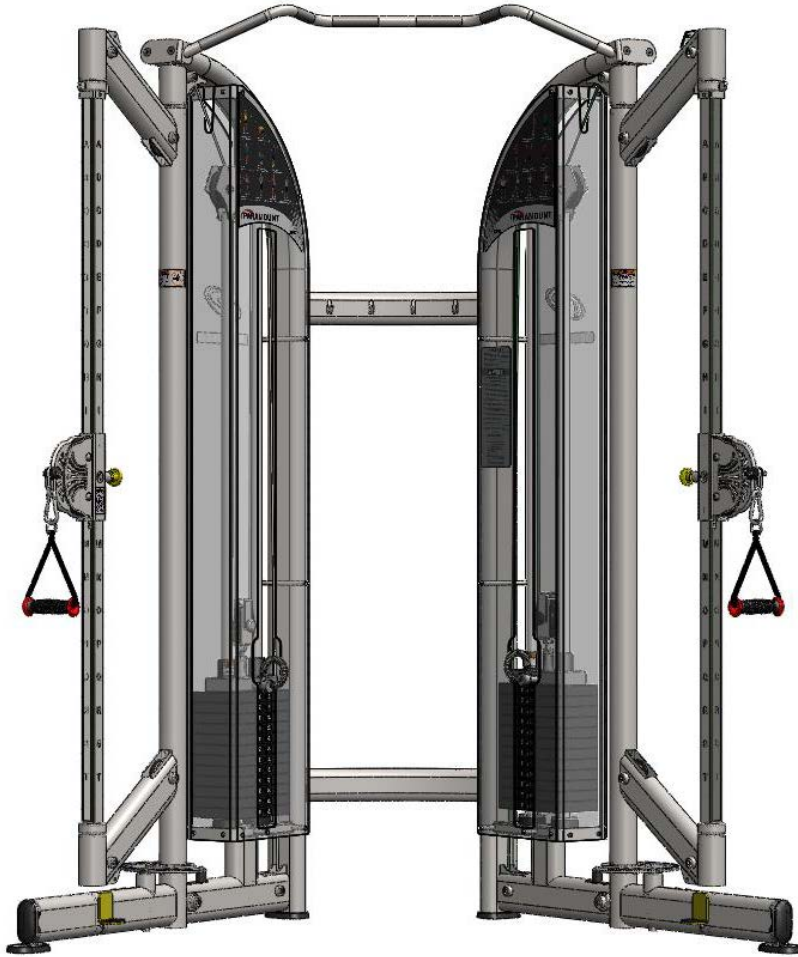
One common design for a cable machine before the priority date of the challenged patent featured two cables routed through two pulleys that are movable along two vertical bars or guides, a so-called “dual-track” design. EX1003, ¶ 40. The Life Fitness G7 Cable Motion Home Gym, for example, featured this type of dual-track design:



EX1003, ¶ 41. The Matrix G3-MSFT 300/400 Functional Trainer and the Paramount XFT-100 Functional Trainer, shown below, also featured this design:



EX1003, ¶ 41.



EX1003, ¶ 42.

The dual-track design was popular because it was stable, simple, and permitted one or multiple users to perform a variety of different exercises.

EX1003, ¶ 43. For example, a user could position both pulleys upward to pull the weight downward for exercises targeting the latissimus, both pulleys downward to pull the weight up for exercises targeting the biceps, or one pulley downward to pull the weight across the body for exercises targeting the obliques. *Id.* The dual-track design was thus uniquely suitable for home gyms or any gym with space

constraints, as it combined the functionality of many different types of cable machines into one package. *Id.*, ¶ 44

B. Electronic Resistance Controls

For a cable machine to function, resistance must be applied to the cable so that the user's muscles are actively engaged while pulling on the cable. EX1003, ¶ 45. To accommodate users at different levels of strength, and for different types of exercise, the resistance must generally be adjustable. *Id.* By 2013, cable machines employed a variety of different mechanisms to provide resistance. EX1003, ¶ 46. One of the most common resistance mechanisms was an adjustable weight stack. EX1003, ¶ 47. Other ways of providing adjustable resistance to the cable included using a magnetic brake, pneumatic pressure, hydraulic resistance, or resistance provided by motors or alternators. EX1003, ¶¶ 46.

Cable machines that employed any of these resistance mechanisms could permit the user to adjust the desired resistance either manually, digitally, or both. EX1003, ¶¶ 47-53. The 2009 model of the LifeCore LC-100 Rower, for example, permitted the user to adjust and view the machine's magnetic resistance using an electronic control panel:



EX1003, ¶ 53. Likewise, the 2012 model of the Weider Platinum Home Gym allowed a user to adjust and view the machine's tensile resistance levels using an electronic control panel:



EX1003, ¶ 54. The Keiser Infinity Performance Trainer, available since the mid-2000's, also incorporated an electronic control panel that allowed a user to view and adjust the cable machine's pneumatic resistance:



EX1003, ¶ 55.

While electronic control panels are generally more expensive to implement than manual controls, electronic control panels that allow the user to adjust resistance were popular for many reasons. EX1003, ¶¶ 56-71. First, adjusting the resistance with a touch of a button is intuitive to users and allows them to finely tune the resistance to a desired level. EX1003, ¶¶ 58-61. For example, the Keiser

Infinity Performance Trainer permitted a user to adjust the pneumatic resistance in one tenth of a pound increments:



EX1003, ¶ 61.

Second, electronic control panels can be placed in more convenient locations on the device so that the user can easily access the resistance settings and increase or decrease the resistance without interrupting an exercise. EX1003, ¶ 62. For

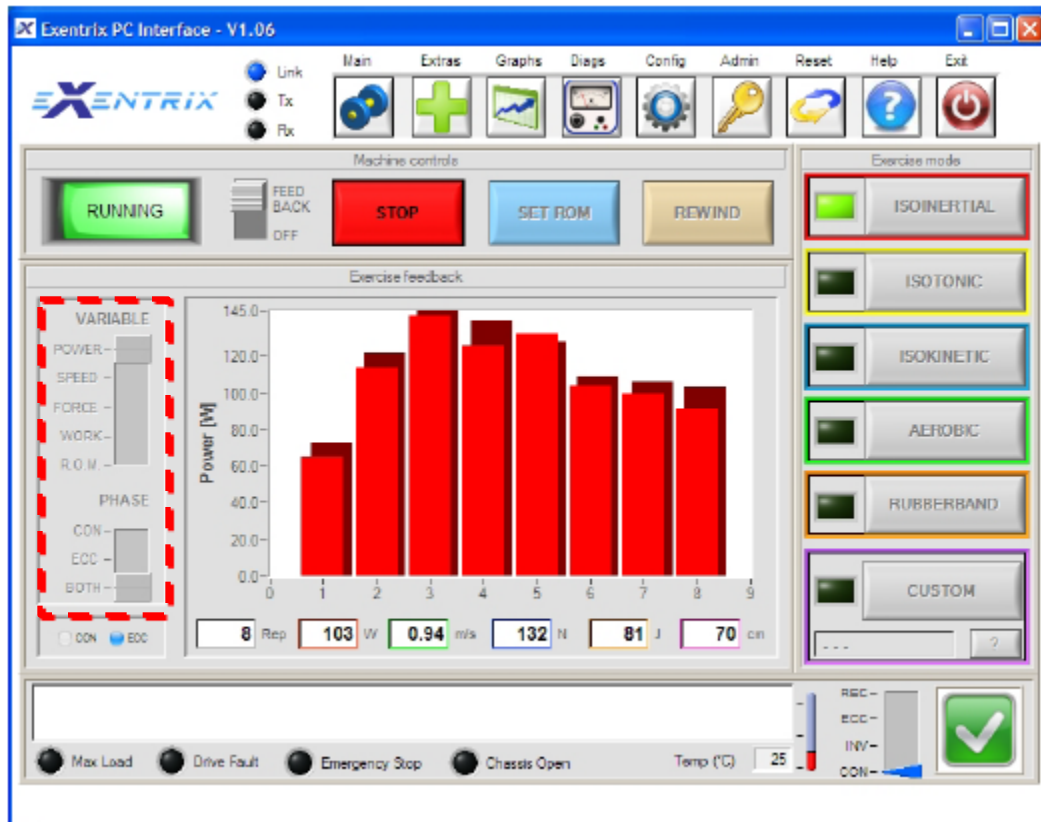
example, the Life Fitness LifeCircuit System that launched prior to 1998 placed the electronic control panel immediately in front of the user:



EX1003, ¶ 62

Third, electronic control panels can also be easily configured to calculate and display metrics that users care about, such as the time spent performing an exercise, the number of calories burned, and/or the force or power exerted by a user during a particular pull on the cable. EX1003, ¶ 63. For example, the

Exentrix cable machine, available since at least 2012, had an interface that showed power, speed, force, work and range of motion.



EX1003, ¶ 64.

Fourth, electronic control panels can be configured to provide visual information and entertain the user, by showing television programs, playing music, or engaging the user in a game. EX1003, ¶ 68-70. For example, the 2011 version of the Precor P80 console allowed a user to watch television, follow instructional videos, or play music while working out:



EX1003, ¶ 69.

Based on these benefits, by 2013, a number of fitness companies marketed exercise machines that included electronic control panels. EX1003, ¶ 71.

C. Displaying User Metrics and Entertainment

In the contemporary fitness industry, there has long been a demand for fitness devices that display information and metrics about a user's workout. EX1003, ¶ 72. Users of fitness equipment often desire to keep track of energy burned and their athletic performance—such as distance and speed on a cardio device or number of repetitions and force or power applied on a strength training device—in order to assess the effectiveness of their workouts and track their progress towards fitness goals. *Id.* In order to meet this demand, fitness equipment companies have marketed and sold devices that calculate and display information about a user's workout for years. EX1003, ¶ 73. For example, Dr.

Gideon Ariel's Computerized Exercise Machine, invented in the 1980's, displayed information on the force exerted by a user during an exercise:

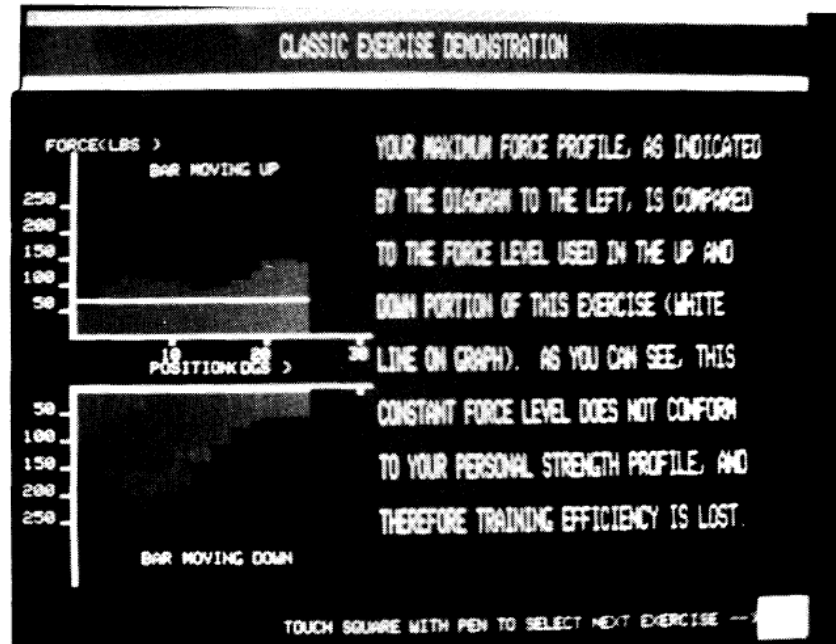


Figure 3. Instantaneous feedback from the Computerized Exercise Machine allows the athlete to read the force level that he or she exerted while exercising.

EX1003, ¶ 74. It has since become commonplace to display user metrics, including force, on fitness machines with electronic control panels, such as the Exentrix. EX1003, ¶ 75.

III. THE '214 PATENT

A. Specification

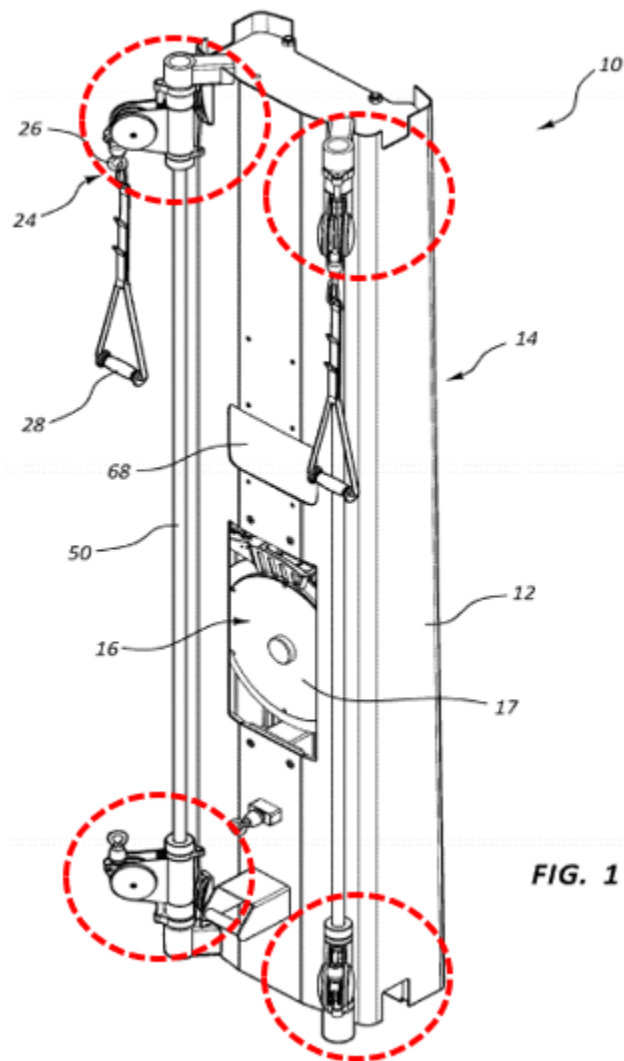
The '214 patent is titled "Cable Exercise Machine." It issued on April 6, 2021, from a U.S. application filed on December 8, 2020, which claims priority to a provisional application filed on December 26, 2013.¹

The Background Technology discussed above was already known in the art, as the specification of the '214 patent acknowledges. Specifically, the '214 patent acknowledges the following: (1) cable and pulley strength training equipment; (2) movable pulleys to allow for many varieties of exercise; (3) flywheels with magnetic brakes; and (4) systems that display information on a user's workout, were all known in the art. *See* EX1001, 1:45-61, 1:57-61, 2:05-08; EX1003 ¶ 26.

The purported advantage of the claimed invention is the *combination* of vertical guides or multiple pulleys disposed about a tower, which allows for many different types of exercises, with the user's ability to fine-tune the resistance and track the work performed during the workout. *Id.*, 12:20-13:17; EX1003 ¶ 28. This combination is reflected in the challenged claims, all of which have two main

¹ For the purposes of this proceeding, Petitioner assumes December 26, 2013 as the '214 patent's priority date. Petitioner reserves the right to contest this or any earlier priority date in this and in any related proceedings.

features: (1) multiple pulleys (sometimes movable along vertical guides); and (2) an electronic control panel that allows a user to view and adjust the level of resistance applied to the cables. *See* EX1001, 12:20-41; 13:03-13. For example, Figure 1 of the '214 patent shows a cable machine with four pulleys that can be adjusted by sliding them vertically along element **50**.



EX1001, Fig. 1 (annotated). In certain claimed embodiments, an electronic control panel **68** may be configured to track and display certain performance metrics, or to play music or video. *See Id.*, 8:46-62.

B. Prosecution History

The application that issued as the '214 patent was filed on December 8, 2020, with 75 claims, which were allowed on February 9, 2021 without amendment. Applicant did not disclose any of the prior art at issue in this Petition during prosecution of '214 patent, nor did the Examiner rely upon or discuss this prior art.²

IV. PERSON OF ORDINARY SKILL IN THE ART “POSA”

The subject matter of the '214 patent relates to cable machines. A POSA in this subject matter as of December 2013 would have at least a bachelor's degree (or equivalent) in electrical engineering, mechanical engineering, biomechanics, kinesiology, exercise science, or a related field, and at least two years of industry or equivalent research experience in the field of exercise equipment. EX1003, ¶ 33. This description is approximate, and a higher level of education or skill

² Applicant did submit IDSes listing Verstegen, Keiser I, and Keiser II during prosecution of a related application, but these references were not discussed at all during prosecution. EX1011; *see also* EX1001 (references cited).

might make up for less experience, and vice versa. EX1003, ¶ 33. This petition does not rely on this precise definition, and the challenged claims would be unpatentable from the perspective of any reasonable level of ordinary skill.

V. CLAIM CONSTRUCTION

Petitioner and Patent Owner have proposed the following constructions on applicable claim terms in the co-pending district court litigation *iFIT Inc. v. Tonal Systems, Inc.*, No. 1:21-cv-00652 (D. Del.), which has been consolidated with *Tonal Systems, Inc. v. iFIT, Inc.*, Case No. 1:20-cv-01197-VAC-CJB (D. Del.)³:

Claim Term or Phrase	Asserted Claim(s)	Petitioner's Proposed Construction	Patent Owner's Proposed Construction
"force exerted by the user"	15-18, 26, 36, 37	A measurement calculated as mass multiplied by acceleration.	Plain and ordinary meaning

Petitioner believes that its construction of "force exerted by the user" reflects the plain and ordinary meaning of this term to POSA. Petitioner's construction of "force" corresponds to the scientific definition of force and likewise reflects how a POSA would understand "force" to be measured in the context of cable machines.

³ Petitioner reserves the right to argue modified or alternative constructions in other proceedings including that the claims are indefinite.

EX1003, ¶ 31. Regardless of which construction is applied, however, the claim limitations including this term would have been obvious to a POSA for the reasons discussed below.

VI. IDENTIFICATION OF GROUNDS (37 C.F.R. §42.104(B))

Ground 1: Claims 1, 6, 7, 21, 51, 54, 59, and 63-66 are unpatentable under § 103 over Verstegen (EX1005) in view of Keiser I (EX1006) and Keiser II (EX1007).

Ground 2: Claims 15-18, 26, 36, and 37 are unpatentable under § 103 over Verstegen (EX1005) in view of Keiser I (EX1006) and Keiser II (EX1007) and in further view of Krementsov (EX1008).

Ground 3: Claims 51, 54, and 59 are unpatentable under § 103 over Lim (EX1009).

Ground 4: Claims 63-66 are unpatentable under § 103 over Lim (EX1009) in view of Gvoich (EX1010).

VII. OVERVIEW OF PRIOR ART

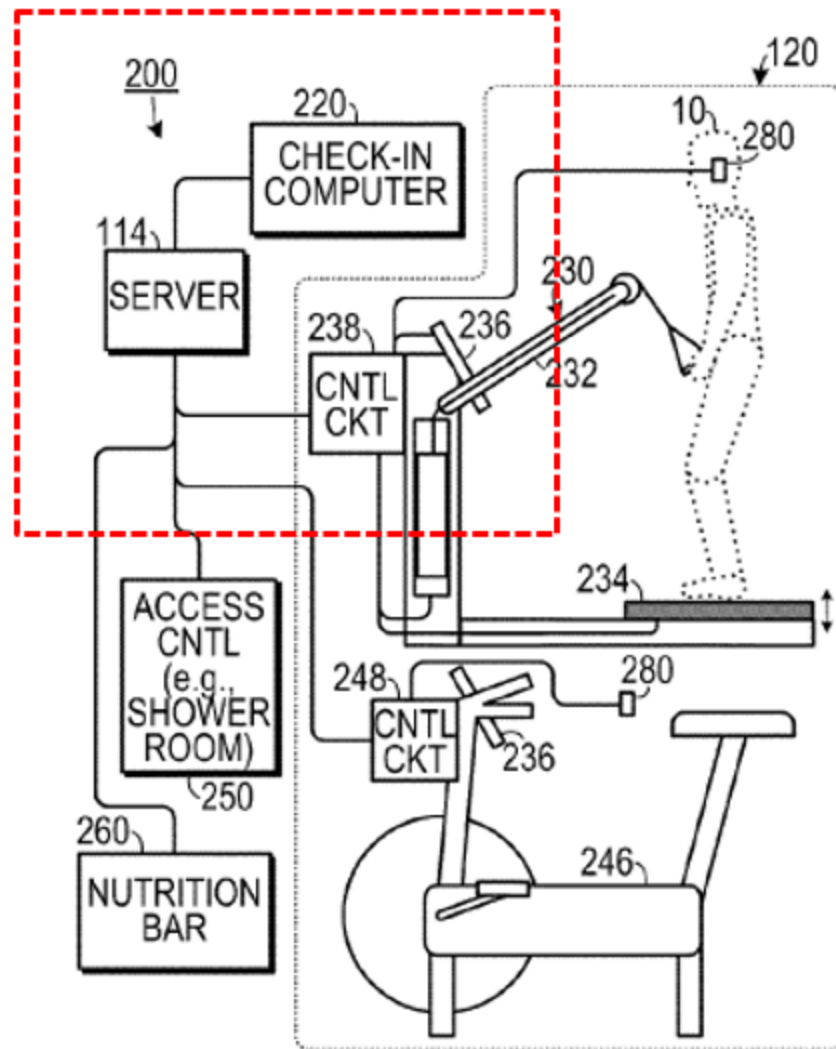
A. U.S. Patent App. Pub. No. 2009/0269728 A1 (“Verstegen”)

Verstegen was filed on April 29, 2008 and published on October 29, 2009. Verstegen is therefore prior art to the ’214 patent under § 102 (a)(1) and (2). Verstegen is assigned to Athletes’ Performance, Incorporated.

Verstegen describes a system for exercise machines that employs a software program that generates a customized workout routine based on the user's physical condition and fitness goals. EX1005, Abstract, ¶¶ 8, 24, 28; EX1003, ¶ 76 .

Verstegen explains that many amateur athletes desire the high-caliber training plans designed by experienced trainers for professional athletes, but generally cannot afford to work with personal trainers on a regular basis. *Id.*, ¶¶ 4-6. Thus, Verstegen explains, demand exists for “a system that automates a substantial portion of the athletic training process.” *Id.*, ¶ 7.

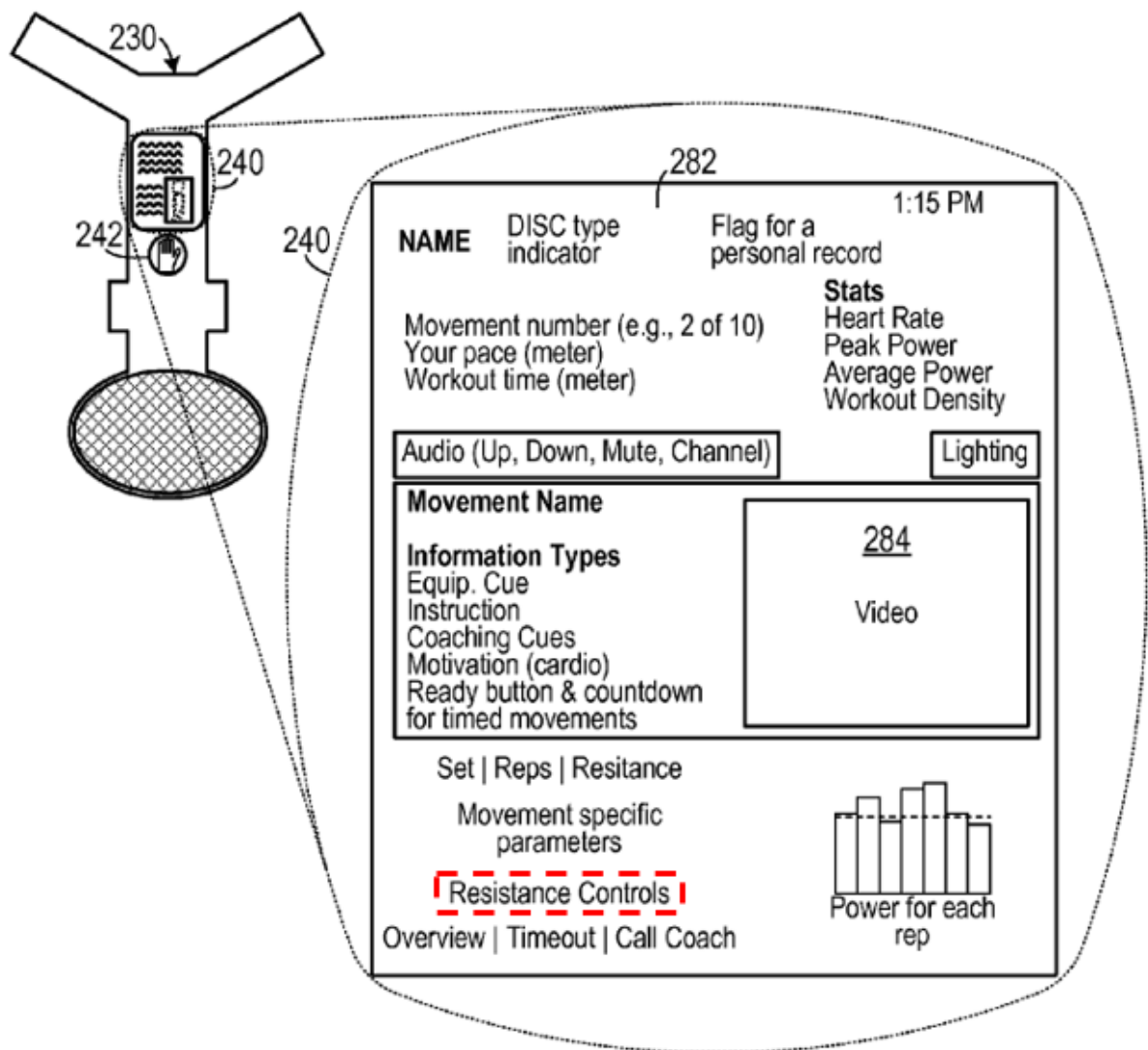
To accomplish this goal, Verstegen describes a software program that receives data regarding an athlete's condition and goals and uses this data to generate a training plan (or “prescription”) for the user. EX1005, ¶¶ 22-28. The user enters the data via a software application at a “check-in computer,” which can be either a computer located locally at a training facility or any remote computer connected to the Internet. *Id.*, ¶¶ 29-30, 32, 45. The check-in computer communicates with a server, which in turn communicates with the control circuit of a strength training apparatus:



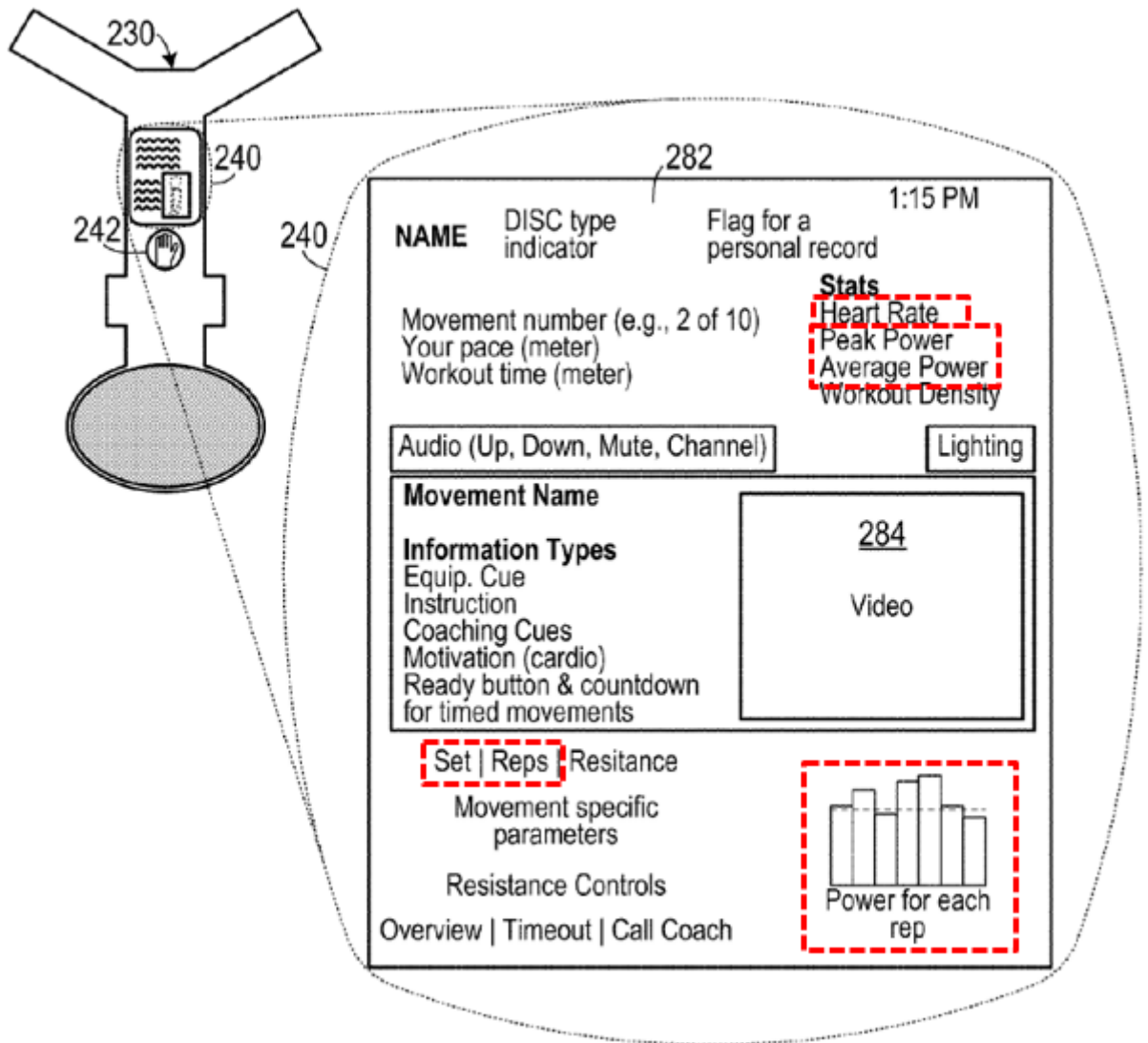
EX1005, Fig. 2 (annotated); *see also* Abstract, ¶¶ 8-11, 35. After generating the user’s customized training plan, the software sets the operational parameters of the strength training apparatus to the levels set forth in the training plan. EX1005, ¶¶ 22, 29, 35.

Verstegen further describes that the control circuit **238** of the strength training apparatus is coupled to an “audiovisual user interface **236** that is used to provide information to, and receive information from, the athlete.” *Id.*, ¶ 42. The

audiovisual interface **236** may have a touch screen that permits the user to control or adjust exercise settings and displays information to the athlete regarding the current training activity. *Id.*, ¶¶ 42-44. As shown in Figure 4 from Verstegen, the interface includes controls to adjust the resistance on the strength training apparatus:



EX1005, Fig. 4 (annotated). The interface also displays metrics like heart rate, sets, repetitions, and the power expended during each repetition:

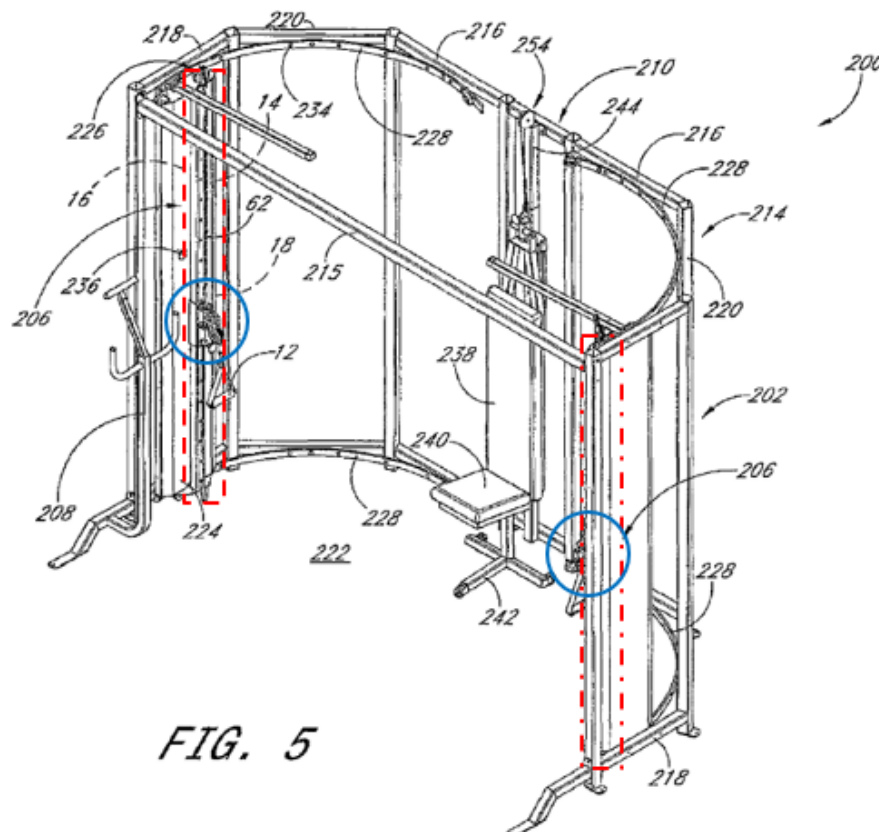


Id.; see also ¶ 43.

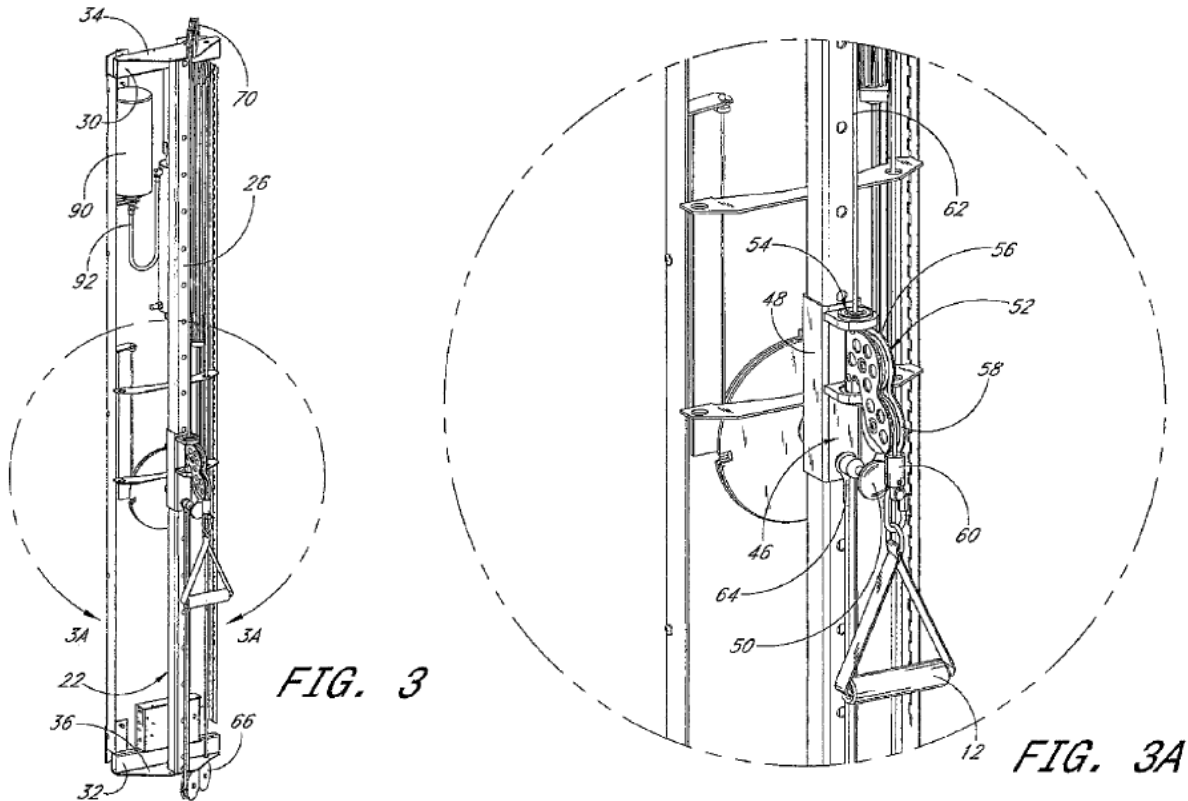
B. U.S. Patent No. 7,995,235 B2 (“Keiser I”)

Keiser I claims priority to a provisional application filed on November 13, 2001, was filed on January 29, 2010, and issued on June 7, 2011. Keiser I is therefore prior art to the ’214 patent under § 102 (a)(1) and (2). Keiser I is assigned to Keiser Corporation.

Keiser I describes a cable strength training apparatus that utilizes pneumatic air resistance to provide “constant resistance throughout the entire exercise stroke.” EX1006, Abstract, 2:27-29, 4:24-29. A user can adjust the amount of resistance applied to the cables by pushing buttons that cause an increase or decrease in pressure within the pneumatic cylinder. EX1006, 8:26-47. The strength training apparatus “offers a range of adjustability and resistances so that a single piece of exercise equipment can be used to perform a multitude of different exercise.” EX1006, 2:24-26. For example, one embodiment features a pair of cables **62** attached to handles **12** that extend through pulleys (blue) which move along two vertical guides (red):



EX1006, Fig. 5 (annotated); *see also* 13:60-14:38. The pulley and vertical guide assembly is shown in greater detail in Figures 3 and 3A:



EX1006, Figs. 3 & 3A. As Keiser I explains, “[t]he guidepost **26** supports a cable guide mechanism **46** that includes a traveler **48**. The traveler **48** is configured to slide over the guidepost **26**.” *Id.*,5:54-56. Additionally, “[t]he traveler **48** supports a handle pulley assembly **52**,” which “comprises a pair of pulleys **56, 58**.” *Id.*,5:65-6:2. The handle pulley assembly includes “a cable **62** (a ‘user cable’)” that is “threaded between the pulleys **56, 58** of the handle pulley assembly **52**” and connected on one end to “handle **12**.” *Id.*, 6:13-16.

C. U.S. Patent No. 8,052,584 (“Keiser II”)

Keiser II claims priority to a provisional application filed on April 22, 2004, was filed on December 29, 2004, and issued on November 8, 2011. Keiser II is therefore prior art to the ’214 patent under § 102(a)(1) and (2). Keiser II is assigned to Keiser Corporation.

Keiser II describes a strength training apparatus that: (1) permits a user to electronically control and view pneumatic resistance, EX1007 at 8:01-44, 10:35-11:04, 12:26-37; and (2) calculates and displays the power expended by the user during the exercise. *Id.*, 14:24-33. These features allow the user to monitor progress and “determine whether the user’s physical capabilities are improving.” *Id.*, 2:41-46.

Like Keiser I, Keiser II describes that a user can adjust the amount of resistance by pushing buttons to increase or decrease pressure within a pneumatic cylinder. *Id.*, 9:52-10:20. Keiser II teaches that this process can be “accomplished by providing a respective actuator signal from each actuator button . . . to a control system **200**.” *Id.*, 10:31-35. Keiser II discloses that the control system processes inputs from the user requesting an increase or decrease in resistance and outputs the appropriate electronic control signals to the corresponding valves. *Id.*, 10:35-11:04. In addition, the control system “calculate[s] the resistive force that will be

perceived by [the] user,” which is then displayed on the display unit **110**, shown below. EX1007., 12:26-37.

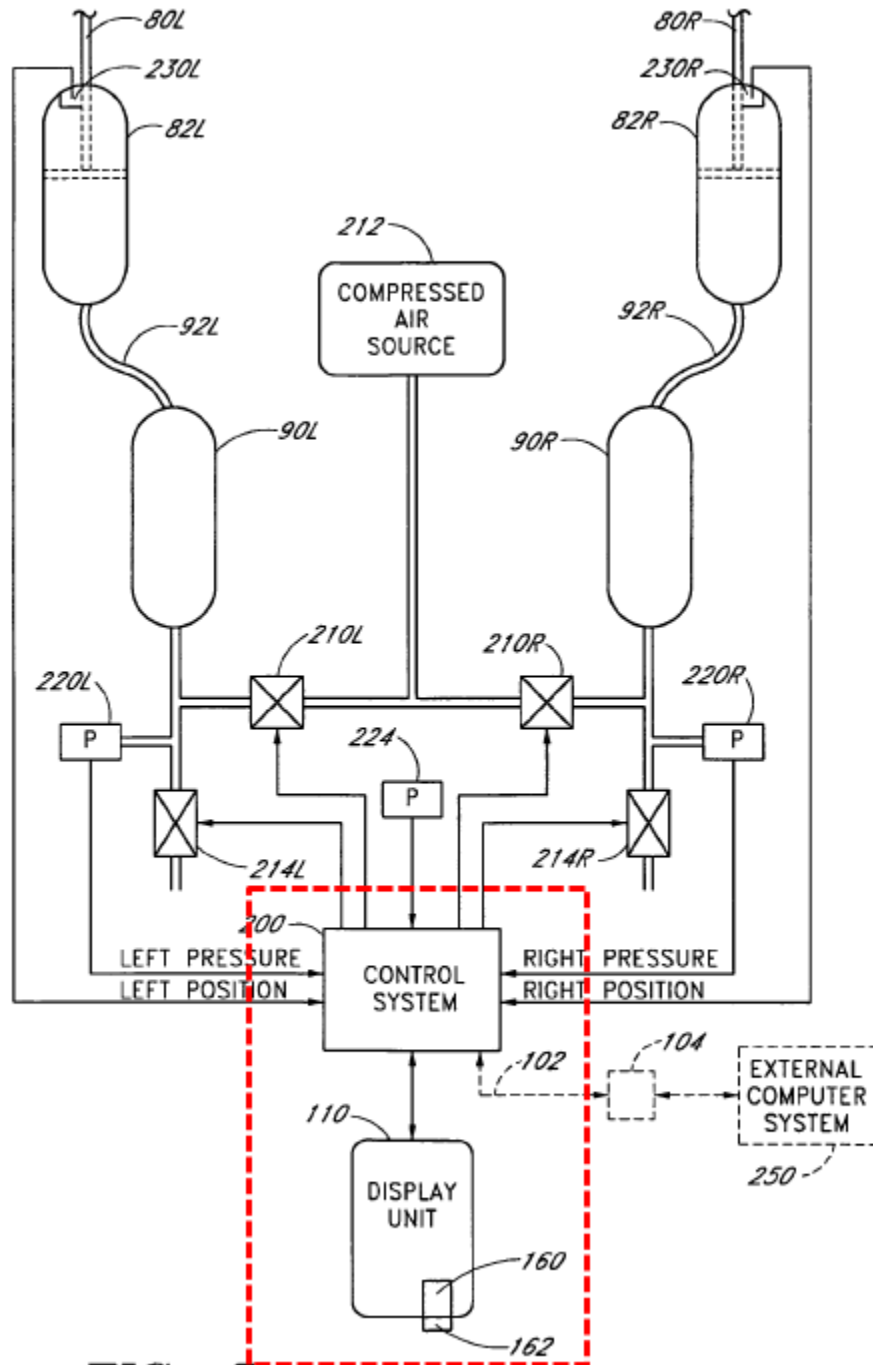
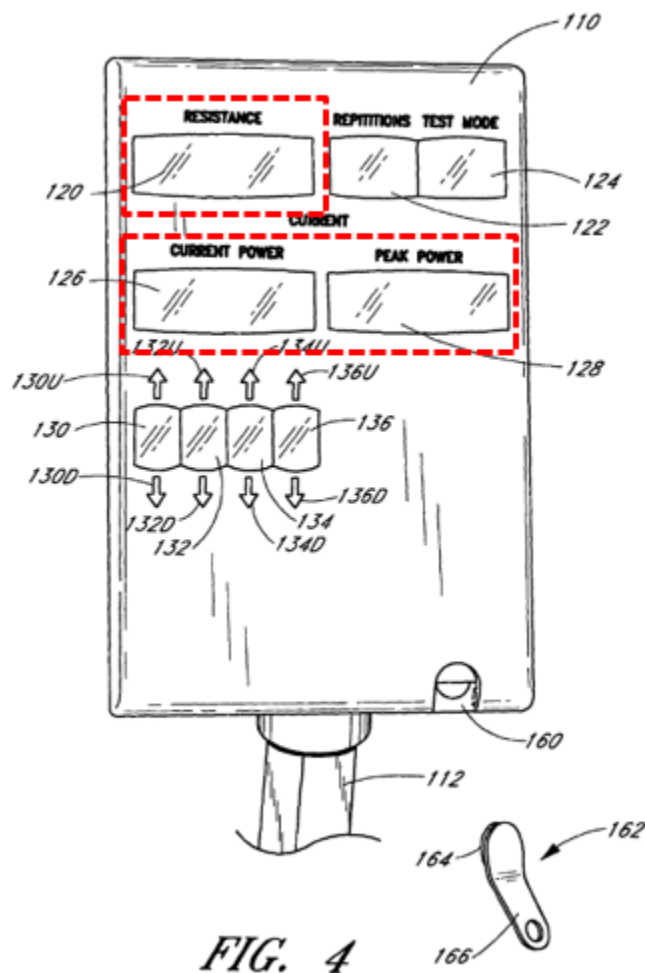


FIG. 5

Id., Fig. 5 (annotated).

The control system **200** also calculates the peak power produced on each repetition and the highest peak power achieved during the workout. EX1007, 14:27-33. The display unit **110** displays to the user the total resistance **120**, the peak power achieved during a particular repetition **126**, and the peak power achieved overall **128**:



Id., Fig. 4; *see also* 8:33-35, 12:27-32.

D. U.S. Patent No. 5,747,688 (“Krementsov”)

Krementsov was filed on October 15, 1996 and issued on May 5, 1998, and is therefore prior art to the ’214 patent under 35 U.S.C. § 102(a)(1) and (2).

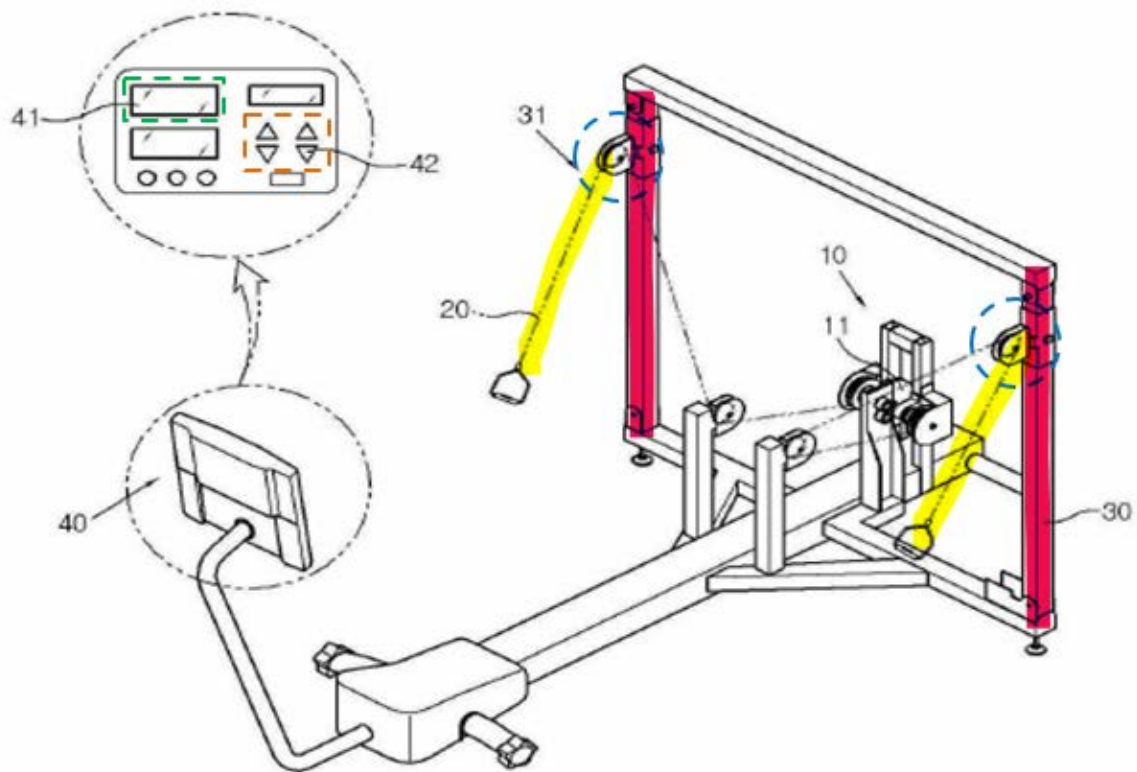
Krementsov describes an apparatus for determining force applied by a user to a pulling element, EX1008, 1:8-10, 32-33, in order to provide information on the user’s strength and health,” *Id.*, 1:20-21. The described “dynamometer” measures both instantaneous force and force applied by the user over a period of time. *Id.*, 1:30-40. Krementsov discloses that the dynamometer is configured to output information on a paper chart, which “shows changes of a force applied by the user over time. These changes show a magnitude of force applied over time, its amplitude, the speed of force application, the time of force application, etc.” *Id.*, 2:36-40.

E. KR Patent No. 10-1112709 (“Lim”)

Lim was filed on June 12, 2009 and published on February 24, 2012, and is therefore prior art to the ’214 patent under 35 U.S.C. § 102(a)(1).

Lim describes an exercise apparatus with two cables coupled to a resistance mechanism—a flywheel with an electromagnetic brake—that applies resistance to the cables. EX1009, ¶ 16. As shown below, the cables **20** (yellow) extend through two pulleys **31** (blue) that are attached to two vertical columns **30** (red). EX1009, ¶ 20, Fig. 2.

Fig. 2

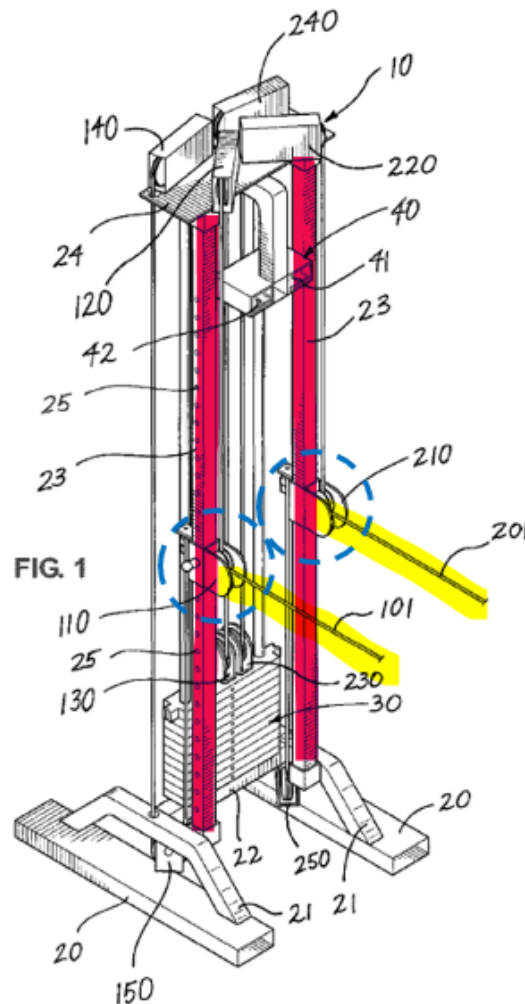


EX1009, Fig. 2. The apparatus includes an electronic control panel **40** that can control the level of resistance based on input from the user through the buttons **42** (orange) on the control panel. *Id.*, ¶ 25. The control panel includes a display **41** (green) that displays the current level of resistance to the user as well as a television program. *Id.*, ¶¶ 23-24.

F. U.S. Patent App. Pub. No. 2013/0296144 A1 (“Gvoich”)

Gvoich claims priority to a provisional application filed on May 4, 2012, was filed on May 3, 2013, and was published on November 7, 2013. Gvoich is therefore prior art to the ’214 patent under § 102 (a)(1) and (2).

Gvoich describes an exercise apparatus as “having multi-cable and pulley linkage assemblies attached to a single load such as a weight stack, or other resistance means (including, without limitation, pneumatic, hydraulic or electromagnetic)[.]” EX1010, ¶¶ 4, 65. One embodiment, shown below, includes two cables, **101** and **201** (yellow), routed through two pulley assemblies **110** and **210** (blue), that move along two vertical columns **23** (red) via “a plurality of spaced-apart transverse bores **25**.” *Id.*, ¶¶ 35-36.



Id., Fig. 1 (annotated).

VIII. GROUNDS

A. Ground 1: Claims 1, 6, 7, 21, 51, 54, 59, and 63-66 are unpatentable under § 103 over Verstegen in view of Keiser I and Keiser II

1. Obviousness to a POSA

a. Motivation to Combine

A POSA would have been motivated to combine the teachings of Keiser I and Keiser II with the teachings of Verstegen because they are all directed to the same field: strength training systems with pneumatic air resistance mechanisms that make it easier for a user to perform a customized workout routine for a variety of different strength training exercises. EX1003, ¶ 149.

Verstegen describes a digital system that uses software to generate a customized workout routine for a strength training apparatus. *See supra* Section VII(A). Verstegen explicitly discloses that the strength training apparatus could be a pneumatic “air resistance training machine of the type known to the art of fitness training.” EX1005, ¶ 35. As Verstegen explains, the advantage of using a strength training apparatus that employs air resistance is that the claimed software program can be configured to control the resistance by adjusting the air pressure in a pneumatic damper. *See Id.*, ¶ 28-29; *see also* EX1003, ¶ 150. Verstegen expressly identifies the “Infinity Functional Trainer, available from Keiser Corp.” as “[o]ne type of suitable exercise machine.” EX1005, ¶ 35.

Given these express disclosures, a POSA would have looked to Keiser Corporation's devices and patents to locate an exemplary model of a strength training apparatus and resistance control mechanism suitable for use with Verstegen's software. EX1003, ¶ 150. A POSA would have viewed the strength training apparatuses described in both Keiser I and Keiser II as suitable apparatuses to use with Verstegen's software, and also would have been motivated to combine their respective disclosures. EX1003, ¶¶ 151-160.

A POSA would recognize that the strength training apparatus described in Keiser I corresponds to the Keiser Infinity Performance Zone, a machine in the same series as the Keiser Infinity Functional Trainer that Verstegen explicitly identifies as suitable for use with its software. EX1003, ¶¶ 151-153. The Performance Zone and the Functional Trainer have the same resistance mechanism and display, and operate using the same software and controls. EX1003, ¶ 153. Based on these similarities, a POSA would have been motivated to combine the strength training apparatus disclosed in Keiser I with the software program disclosed in Verstegen. *Id.*

A POSA would have been further motivated to combined Keiser I and Verstegen because Keiser I describes a strength training apparatus that can be used to perform a variety of different exercises. EX1003 ¶ 154. Verstegen explains that the strength training apparatus used with its software should be "configured to

facilitate performance of a plurality of exercises by the athlete.” EX1005, ¶ 9.

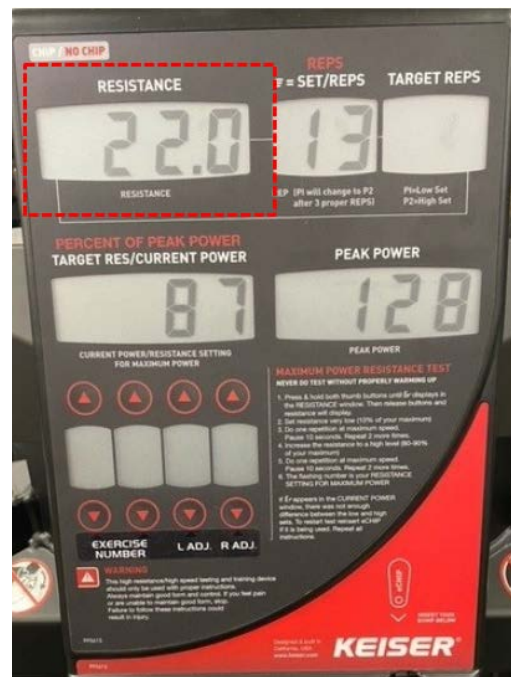
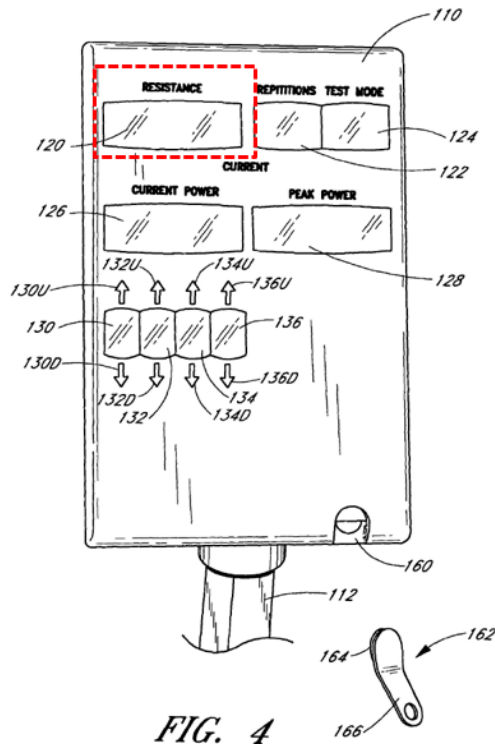
Keiser I describes that the advantage of its cable machine is that it is a “compact pneumatic exercise apparatus” that “offers a range of adjustability and resistances so that a single piece of exercise equipment can be used to perform a multitude of different exercises.” EX1006, 2:24-32. A POSA would recognize that a single exercise machine that allows a user to perform a wide variety of exercises is advantageous when designing exercise equipment intended for locations with limited space, such as home gyms or compact commercial gyms. EX1003, ¶ 154. A POSA would therefore have been motivated to use Keiser I’s strength training apparatus with Verstegen’s software in order to maximize the amount of available exercises for Verstegen’s customized workout routine while taking up a minimal amount of space. *Id.*

A POSA would have been additionally motivated to combine Keiser I and Verstegen because Keiser I describes a strength training device that uses pneumatic air resistance. EX1003, ¶¶ 155. Verstegen discloses that its software may be configured to control resistance in the strength training apparatus by adjusting the air pressure in a pneumatic air resistance mechanism. EX1005, ¶ 28-29; *see also* EX1003, ¶ 155. Keiser I describes that its strength training apparatus includes a “resistance assembly **16**” that employs a pneumatic actuator and pneumatic cylinder to selectively control the resistance applied to the cables. EX1006, 4:49-

54, 7:23-30, 7:41-49. 15:55-56. The user can adjust the amount of resistance applied to the cables by pushing buttons that actuate valves that increase or decrease the air pressure within the pneumatic cylinder. *Id.*, 8:29-47. A POSA would have understood that this type of pneumatic resistance mechanism is the type that Verstegen describes can be controlled by its software. EX1003, ¶ 155.

A POSA also would have been motivated to combine Verstegen and Keiser I with Keiser II. Verstegen describes that its software program is in communication with an electronic control panel on the strength training apparatus, which controls and displays the resistance on the device, and calculates and displays other metrics like repetitions and power. *See* EX1005, ¶¶ 42-44; EX1003, ¶ 156. Keiser II describes an electronic control panel that performs all of these functions, and that can be used in particular with a pneumatic air resistance device like the one described in Keiser I and Verstegen. EX1003, ¶¶ 156-157. Specifically, Keiser II: (1) describes how a pneumatic resistance system that operates in an identical way to the one described in Keiser I can be controlled electronically, EX1007, 9:52-11:04; EX1003, ¶ 157; and (2) describes how the pneumatic resistance (and force exerted by the user) can be tracked and displayed on an electronic control panel like the one described in Verstegen. EX1007, 8:33-35, 10:35-58, 12:26-36. A POSA would therefore have looked to Keiser II for its teachings regarding an electronic control panel that can be used with both Keiser I's device and

Verstegen's software. EX1003, ¶ 157. Indeed, the electronic control panel disclosed in Keiser II (shown below on the left in Figure 4) displays the same information as the Keiser Infinity Functional Trainer (shown below on the right), which Verstegen specifically identified as suitable for use with its software:



EX1003, ¶¶ 158-159.

A POSA would also have been motivated to combine the disclosures of Keiser I and Keiser II together given the common assignee and the overlapping subject matter. Indeed, Keiser Corporation's current website (which lists fewer than ten United States utility patents) identifies Keiser I and Keiser II as jointly "applicable" to over 50 of its products, including the Keiser Infinity Functional Trainer. EX1003, ¶ 160; *see also* Keiser Patents, Keiser,

<https://www.keiser.com/lp/patents> (last visited May 2, 2022). Keiser II also cites to U.S. Patent Appl. No. 2003/0115955A1, an application in the same family as Keiser I that contains an identical specification and therefore identical disclosures. *Id.*

b. Reasonable Expectation of Success

A POSA would also have had a reasonable expectation of success in combining the disclosures of Verstegen with Keiser I and Keiser II. EX1003, ¶¶ 161-164. As discussed below, Verstegen expressly discloses that the Keiser Infinity Functional Trainer can be used with the software disclosed in Verstegen and Keiser I describes an apparatus analogous to this product. EX1003, ¶ 161. Adding software functionality such as that described in Verstegen would have been routine for a POSA as of March, 2013, and there would have been no technical obstacles associated with such a combination, as reflected by the fact that many of the then-existing cable machines included electronic displays and associated software. *Id.*

Additionally, a POSA would have had a reasonable expectation of success in combining the disclosures of Keiser II relating to the electronic panel with the combined apparatus/software of Keiser I and II. A POSA would have understood that the buttons described in Keiser I are functionally identical to the buttons described in Keiser II and could likewise be coupled to a “control system **200**” that

outputs electronic control signals to operate the corresponding valves in the pneumatic cylinder. EX1007, 10:35-11:04; EX1003, ¶ 162. Implementing Keiser II's control system in Keiser I's apparatus would have been a matter of ordinary intuition and common sense given Keiser II's express teachings on how to implement these controls in a substantially similar pneumatic air resistance mechanism. *Id.*, ¶ 162.

A POSA would also have had a reasonable expectation of success in combining Verstegen's software with Keiser II's electronic control panel. *Id.*, ¶ 163. A POSA would have understood that Keiser II's control system **200** is functionally equivalent to Verstegen's control circuit **238**, as both are made up of generic processors and associated circuitry and memory that are configured to: (1) control a pneumatic air resistance mechanism in the strength training apparatus; and (2) communicate with an electronic display. *Id.* Both Verstegen's control circuit and Keiser II's control system are implemented using common, well-known electronic components that are connected to other common, well-known electronic components and devices (like their associated displays) using known techniques. *Id.* A POSA would have understood that Keiser II's control system and display could easily be configured to run different kinds of software. EX1003, ¶ 164. A POSA would therefore have understood that Verstegen's software program and

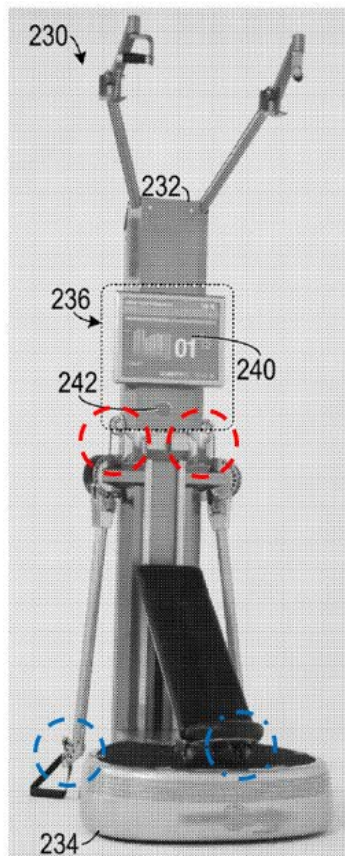
associated functions could easily be implemented using Keiser II's control system and combined with the apparatus described in Keiser I. *Id.*

2. Claim 1

a. [1.P] A cable exercise machine comprising:

To the extent the preamble is limiting, Verstegen discloses this limitation.

Verstegen describes that its exercise system “includes a strength training apparatus 230 (such as a resistance training apparatus well known to the art of athletic training).” EX1005, ¶ 34. The strength training apparatus **230** has two pull cables (red), each routed through a pulley (blue, one hidden from view) and ending with a handle that the user pulls on to perform strength training exercises:



EX1005, Fig. 8 (annotated). A POSA would recognize that this type of strength training apparatus is a cable machine. *See* EX1003, ¶ 94.

Keiser I also discloses a cable machine. Keiser I describes a cable strength training apparatus that utilizes pneumatic air resistance, EX1006, 4:24-29, with cables routed through pulleys, ending with a handle that the user pulls on to perform an exercise, EX1006, Abstract, 5:65-6:4, 6:13-16.

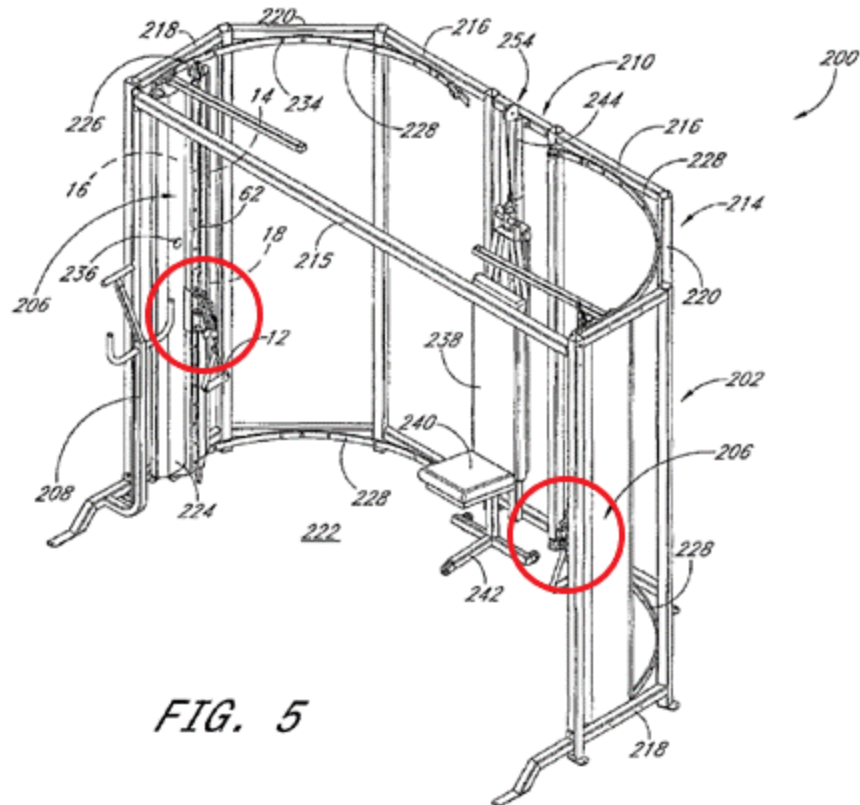
For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser I to the strength training apparatus in Verstegen. Accordingly, to the extent Patent Owner argues that this limitation is not explicitly disclosed in Verstegen, it would nonetheless have been obvious based on Verstegen in combination with Keiser I. *See* EX1003, ¶ 94, 149-164.

- b. **[1.1] a first vertical guide; a first pull cable routed through a first pulley, the first pulley movable along a length of the first vertical guide; a second vertical guide; a second pull cable routed through a second pulley, the second pulley movable along a length of the second vertical guide;**

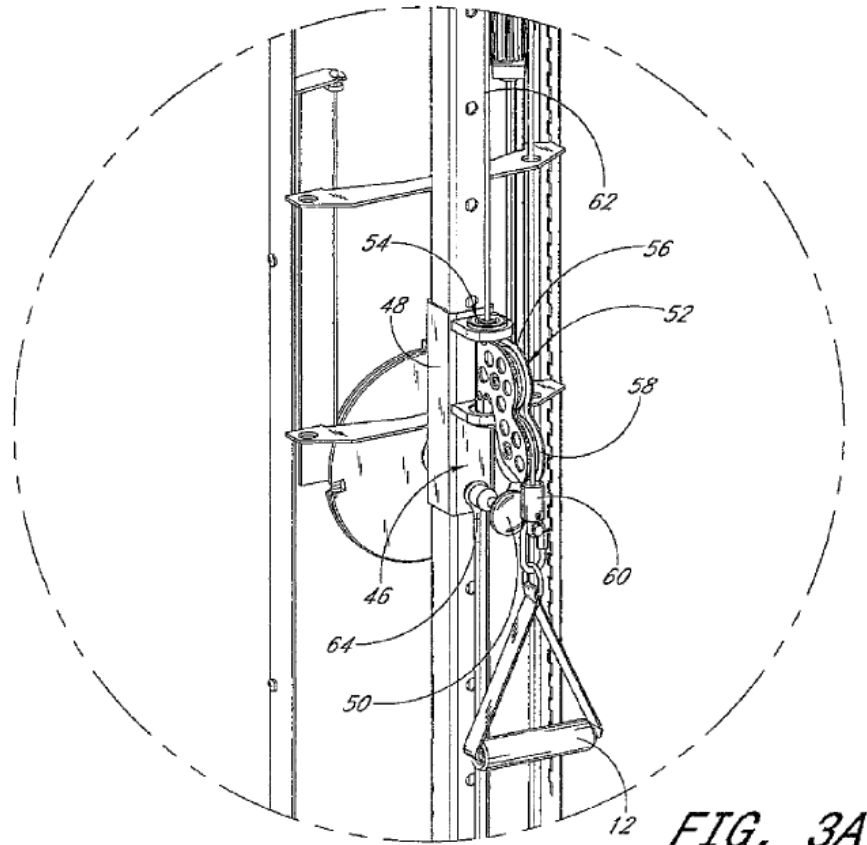
Verstegen in combination with the knowledge of a POSA discloses this limitation. As discussed in element [1.P], Verstegen describes a strength training apparatus with two sets of cables routed through pulleys. It would have been obvious to a POSA that, instead of attaching the pulleys to adjustable arms (as depicted in one embodiment in Verstegen), the pulleys could be movable along vertical guides that are incorporated into the frame of the strength training

apparatus. EX1003, ¶¶ 97-98. As described in Section VII(A), dual track designs of this type were well known in the art and conveyed many known advantages, including that they were stable, simple, and allowed a user to perform many different types of strength training exercises using the same device. EX1003, ¶ 99. A POSA would have known that the dual track design was one of a finite number of options for a cable machine designed to enable multiple exercises in minimal space, and would have been motivated to choose this design based on aesthetic or functional preferences. EX1003, ¶¶ 100-102.

Furthermore, the claimed configuration of vertical guides, pulleys, and cables is also explicitly disclosed in Keiser I. Keiser I's cable machine features a pair of cables routed through "movable pulleys," EX1006, 4:32, which move along two vertical guides:



Id., Fig. 5 (annotated); *see also* 13:60-14:38. This configuration “allow[s] the user to change the direction in which the user . . . pulls during a set of the exercise repetitions.” *Id.*, 4:32-34. In this embodiment, a “vertical guidepost **26** preferably comprises a square steel tube and has a series of locking holes formed through a sidewall thereof.” *Id.*, 5:50–52. Keiser I discloses that each pulley is attached to a “traveler **48**,” which is configured to “slide” and “be moved vertically over the guidepost **26**.” EX1006, 5:54-59. The pulleys can be moved up and down the vertical guidepost using a knob **50** that locks the traveler/pulley in place at different vertical positions allow the guidepost as shown below in Figure 3A:



Id., Fig. 3A. A POSA would recognize that the guideposts, travelers, pulleys, and cables disclosed in Keiser I are vertical guides and cables routed through pulleys which move along the vertical guides as required by this claim limitation.

EX1003, ¶¶ 103-105.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser I to the strength training apparatus in Verstegen. Accordingly, to the extent the vertical guides required by this claim limitation would not have been obvious based on Verstegen alone, they would

nonetheless have been obvious based on Verstegen in combination with Keiser I. *See* EX1003, ¶¶ 106, 149-164.

- c. **[1.2] and an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable,**

Verstegen discloses this limitation. Verstegen describes that the “strength training apparatus **230** has an audiovisual interface **236**” that is “in data communication with [a] control circuit **238**.” EX1005, ¶ 42. A POSA would recognize that Verstegen’s audiovisual interface **236** and corresponding control circuit **238** constitute an “electronic control panel” as described by the ’214 patent. EX1003, ¶¶ 107-108.

Verstegen teaches that the “control circuit **238** (which might include a local processor and associated circuitry)” is “in communication with [a] server **114**” and is “configured to apply resistance settings” to the strength training apparatus. EX1005, ¶ 35. For example, via the control circuit **238**, “[t]he server can set the exercise machine to have a desired resistance level for the exercise by controlling the pressure in the pneumatic damper.” *Id.*, ¶¶ 29, 35, Fig. 2. A POSA would understand that in a cable machine like the one illustrated in Verstegen, resistance would be applied to the cables, so that the user’s muscles are engaged while pulling on the cables. EX1003, ¶¶ 109. A POSA would further recognize that the panel disclosed in Verstegen is an electronic control panel configured to allow for

one or more levels of resistance to a user pulling on the cables of the strength training apparatus. EX1003, ¶ 108. Even if Patent Owner argues that this limitation is not explicitly disclosed in Verstegen, it would have been obvious to a POSA because, as described in Section VII(B), control panels that permit a user to adjust the resistance on a cable machine were well known in the art and provided well-known benefits to users. EX1003, ¶ 110.

Keiser II also explicitly discloses the claimed electronic control panel. Keiser II describes a strength training apparatus that includes a display unit **110** and corresponding control system **200**:

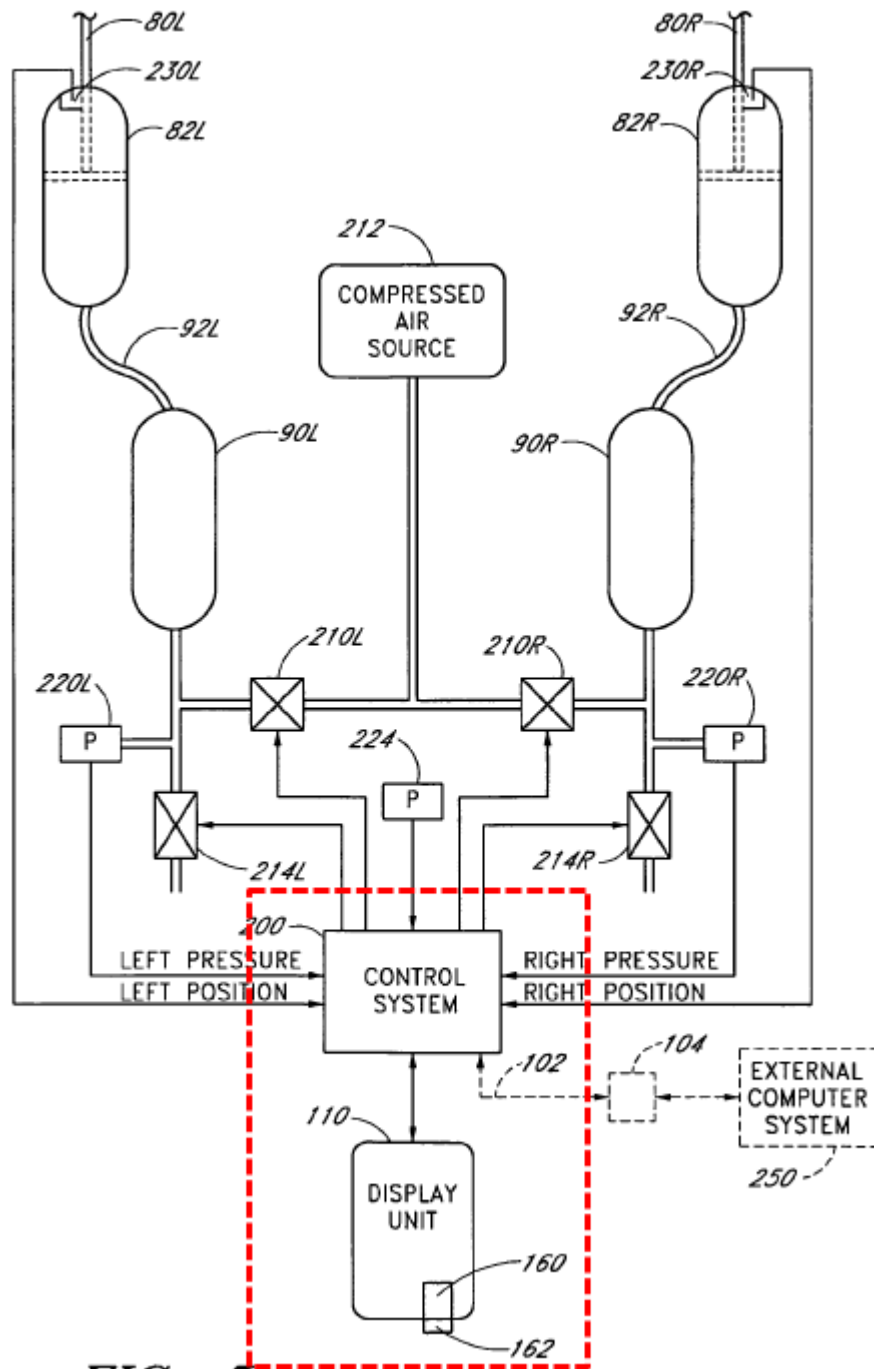


FIG. 5

Keiser II

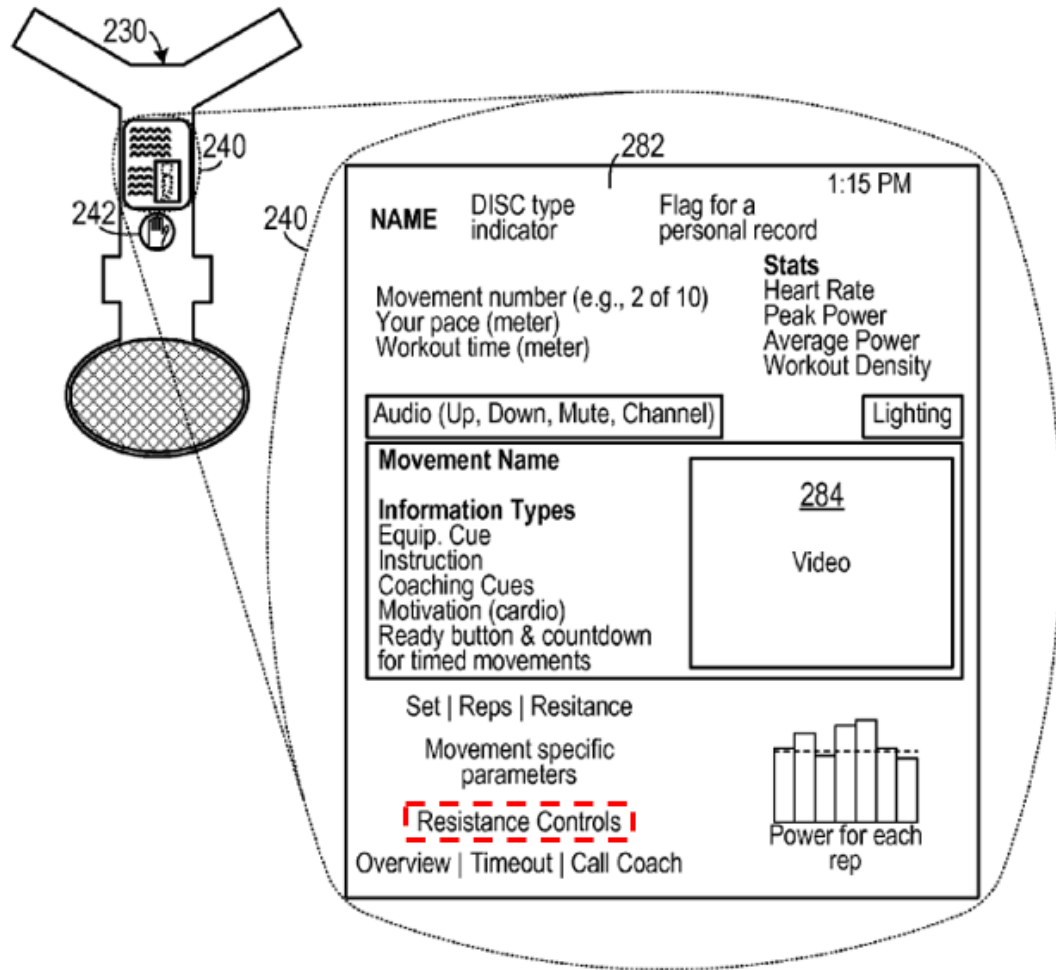
EX1005, Fig. 5 (annotated). A POSA would recognize that Keiser II's display unit 110 and corresponding control system 200 constitute an "electronic control panel"

as described by the '214 patent. EX1003, ¶ 111. As Keiser II explains, “the control system **200** comprises a plurality of microprocessors programmed to perform specific functions, such as real-time measurement and adjustment of air pressures, real-time measurement of positions and computation of velocities, communicating with the user via the display panel, and the like.” EX1007, 10:35-42. A user can adjust the amount of resistance applied to the cables by pushing buttons that send actuator signals to the control system **200**, which cause the apparatus to increase or decrease resistance. *Id.*, 8:33-44, 10:17-35, 10:43-64, 12:26-36.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser II to the electronic control panel in Verstegen. Accordingly, to the extent Patent Owner argues that this limitation is not explicitly disclosed in Verstegen, it would nonetheless have been obvious based on Verstegen in combination with Keiser II. *See* EX1003, ¶¶ 113, 149-164.

d. [1.3] electronically allow for adjustment of the level of resistance to the user pulling on the first pull cable and/or the second pull cable,

Verstegen discloses this limitation. Verstegen discloses that its electronic control panel “can include a video display **240**” with a touch screen, which can “include control inputs, such as: . . . resistance settings” EX1005, ¶¶ 42-43.



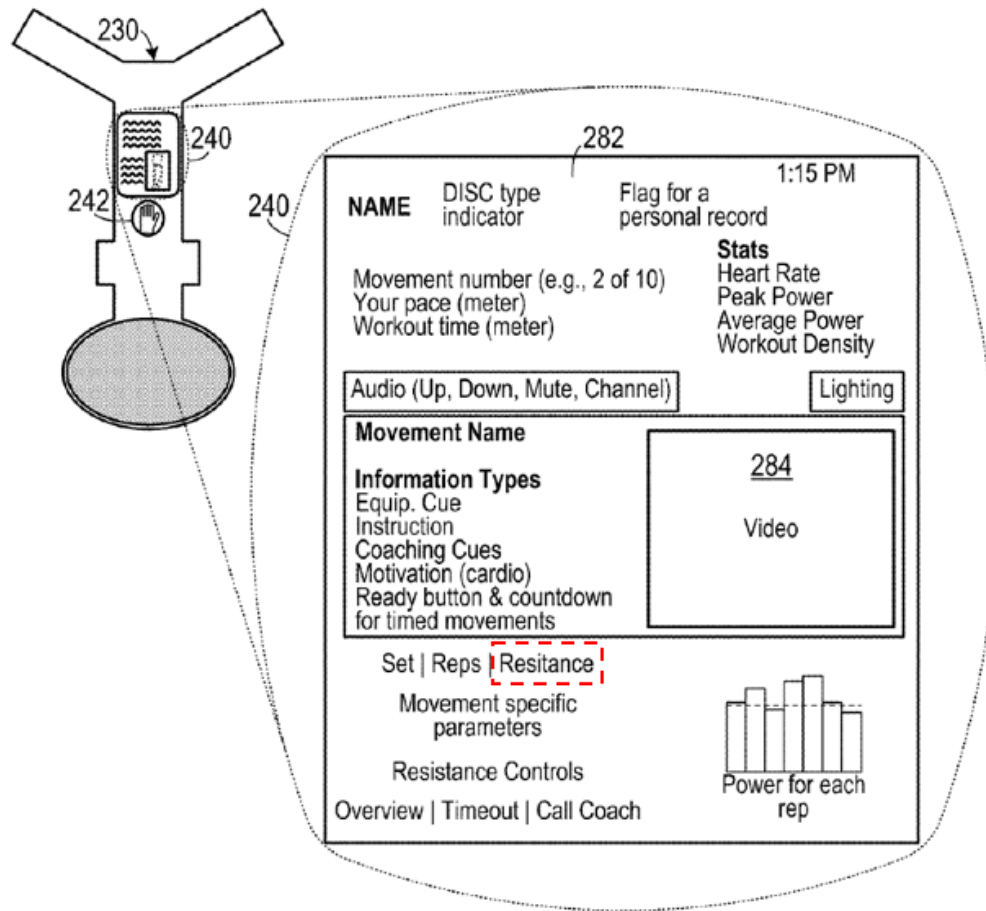
EX1005., Fig. 4 (annotated). A POSA would recognize that these control inputs are configured to electronically allow for adjustment of the level of resistance to the user pulling on the cables. EX1003, ¶¶ 114-115. Even if Patent Owner argues that this limitation is not explicitly disclosed in Verstegen, it would have been obvious to a POSA because, as described in Section VII(C), control panels that permit a user to adjust the resistance on a cable machine were well known in the art and provided well-known benefits to users. EX1003, ¶ 116.

Keiser II also explicitly describes the claimed configuration. Keiser II discloses that the user can adjust the amount of resistance applied to the cables by pushing actuator buttons **66R** and **66L**, which are linked to the control system **200**. EX1007, 10:24-42, 12:26-37. As described in element [1.2], these buttons electronically direct the control system **200** to communicate commands to the pneumatic resistance system to adjust the level of resistance. *Id.*, 8:33-44, 10:31-58, 12:26-37. Keiser II thus describes an electronic control panel configured to electronically allow for adjustment of the level of resistance by the user. EX1003, ¶ 117.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser II to the electronic control panel in Verstegen. Accordingly, to the extent Patent Owner argues that this limitation is not explicitly disclosed in Verstegen, it would nonetheless have been obvious based on Verstegen in combination with Keiser II. *See* EX1003, ¶¶ 118, 149–164.

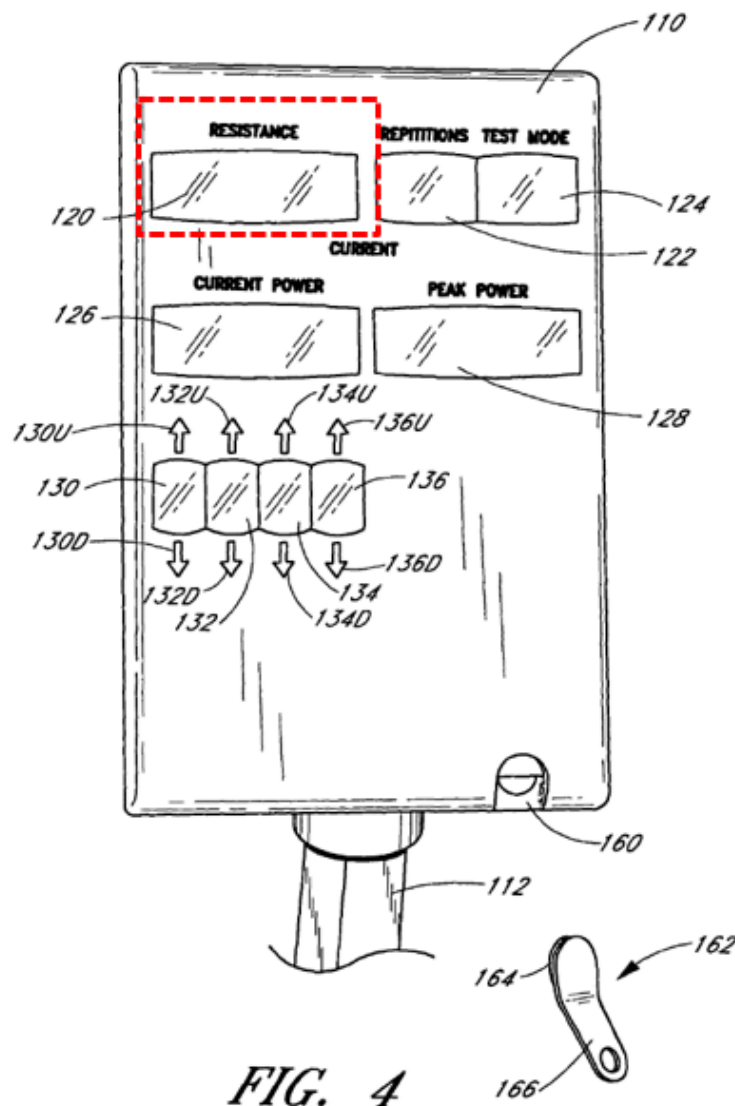
e. [1.4] and electronically present the adjusted level of resistance to the user.

Verstegen discloses this limitation. Verstegen discloses that the video display **240** “displays information to the athlete regarding the current training activity” including “movement specific parameters.” EX1005, ¶ 43. As shown in Figure 4, below, resistance can be controlled and displayed:



EX1005, Fig. 4 (annotated); EX1003, ¶ 119. A POSA would recognize that the depicted screen includes both the controls to modify the resistance, as well as a display to show the adjusted level of resistance to the user. *Id.* Even if Verstegen did not explicitly disclose any portion of this limitation, it would have been obvious to a POSA to incorporate these features into the electronic control panel in Verstegen because, as described in Section VII(C), cable machines with electronic control panels that presented the current level of resistance to the user were well known in the art and provided known benefits to users. EX1003, ¶ 120.

Keiser II also explicitly discloses this limitation. Keiser II teaches that its “display panel comprises a RESISTANCE indicator **120** that displays the total resistance applied to the two handgrips” EX1007, 8:33-35. Keiser II explains that “[t]he calculated resistive force is advantageously displayed as the resistance on the RESISTANCE indicator **120** of the display unit **110** so that a seated user can readily observe the resistance selected.” *Id.*, 12:28-31.



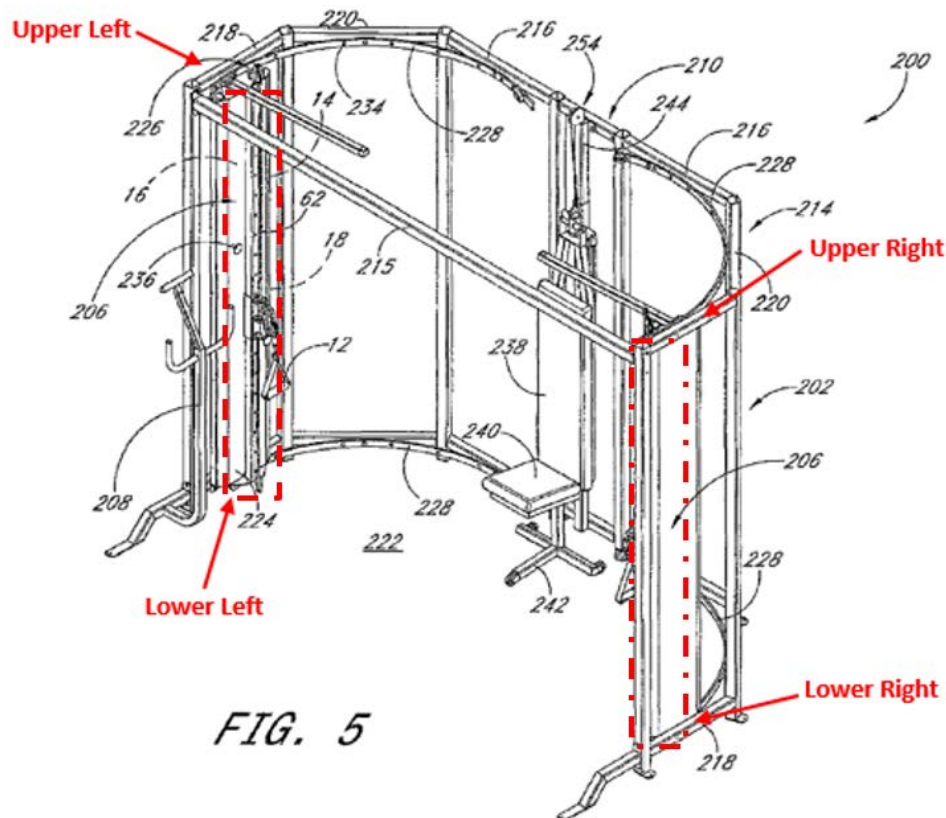
EX1007, Fig. 4 (annotated). EX1003, ¶ 121.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser II to the strength training apparatus in Verstegen. Accordingly, to the extent Patent Owner argues that this limitation is not explicitly disclosed in Verstegen, it would nonetheless have been obvious based on Verstegen in combination with Keiser II. *See* EX1003, ¶¶ 122, 149–164.

3. Claim 6

- a. **[6.] The cable exercise machine of claim 1, wherein: the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine; and the second vertical guide extends from an upper right location of the cable exercise machine to a lower right location of the cable exercise machine.**

Verstegen (alone or in combination with Keiser I and/or II as described in claim 1) discloses this limitation. As discussed in limitation [1.1], Keiser I describes a cable machine with movable pulleys attached to a pair of vertical guides which, as depicted below, are arranged to extend from the upper left to lower left and upper right to lower right of the machine, respectively: EX1006, Fig. 5 (annotated); *see also* 13:60-14:38; EX1003, ¶ 123.



For the reasons stated in Section VIII(A)(1) and limitation [1.1], it would have been obvious to a POSA to apply the disclosures of Keiser I to the strength training apparatus in Verstegen. Accordingly, to the extent the configuration required by this claim limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I. *See* EX1003, ¶¶ 124, 149-164.

4. Claim 7

- a. [7.] The cable exercise machine of claim 6, wherein: the first pulley is further rotatable from side to side on the first vertical guide; and the second pulley is**

further rotatable from side to side on the second vertical guide.

Verstegen (alone or in combination with Keiser I and/or II as described in Claim 1) discloses this limitation. Keiser I discloses that the “traveler **48**,” attached to the two vertical guideposts, “supports a handle pulley assembly **52** of the cable guide mechanism **46** via a hinge connection **54**. The hinge connection **54** allows the handle pulley assembly **52** to rotate about a vertical axis.” EX1006, 5:65-6:1. A POSA would therefore recognize that the pulleys disclosed in Keiser I are rotatable from side to side on the vertical guide. EX1003, ¶ 125.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures in Keiser I to the strength training apparatus in Verstegen. Accordingly, to the extent the configuration required by this claim limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I. *See* EX1003, ¶¶ 126, 149-164.

5. Claim 21

- a. [21.] The cable exercise machine of claim 1, wherein the electronic control panel is further configured to: electronically receive input from the user to play music; and electronically play the music for the user.**

Verstegen (alone or in combination with Keiser I and/or II as described in claim 1) discloses this limitation. As discussed in limitations [1.2 and 1.3],

Verstegen discloses an electronic control panel with a display unit that is configured to display audiovisual content to the user. EX1005, ¶¶ 42-43. In particular, the screen **282** may include “audio controls” and “video content **284**” such as “a video representation or an animation of someone demonstrating the current exercise assigned to the athlete.” *Id.*, ¶ 43. A POSA would recognize that the vast majority of instructional videos of this type use music to enhance the video or help the user control pace or timing. EX1003, ¶¶ 127. And even if Verstegen did not explicitly disclose that the electronic control panel can play music, it would have been obvious to a POSA to incorporate this feature. EX1003, ¶¶ 128. It has been well-known in the art for decades that music improves performance and outcomes when exercising, and as described in Section VII(B), electronic control panels that were configured to play music existed well before the priority date of the '214 patent. *Id.*, ¶ 128

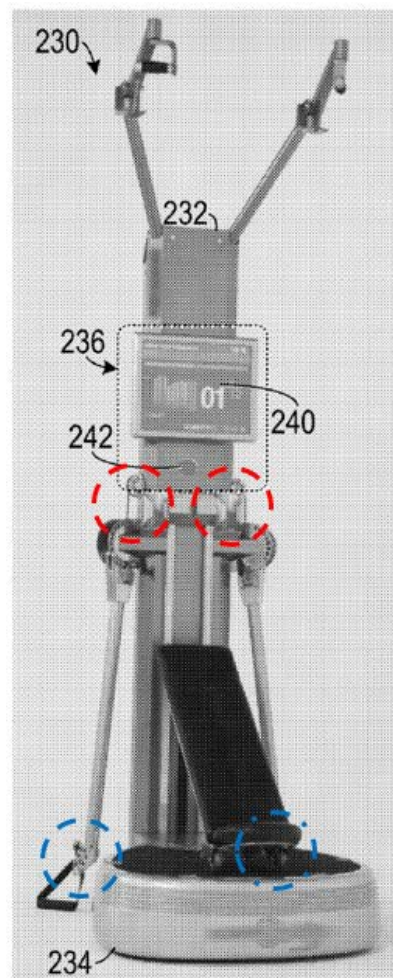
6. Claim 51

a. [51.P] A cable exercise machine comprising:

As discussed in limitation [1.P] Verstegen, or Verstegen in combination with Keiser I, discloses this limitation. EX1003 ¶ 129.

- b. [51.1] a first pull cable routed through a first pulley; a second pull cable routed through a second pulley;

Verstegen discloses this limitation. Figure 8 of Verstegen depicts an embodiment of the strength training apparatus **230** that includes two pulleys (blue) through which two cables (red) extend:



EX1005, Fig. 8 (annotated). A POSA would recognize that the circled portion of the figure depicts a pulley through which the first cable would extend, permitting the user to perform an exercise by pulling on the handle attached to the cable.

EX1003, ¶ 131. Though the end of the second arm is hidden out of view, a POSA

would understand that a corresponding pulley would be attached to the end of the second arm to permit a user to perform an exercise simultaneously with both arms.

Id. A POSA would therefore recognize that the cable machine disclosed in Verstegen includes two pull cables, each routed through a pulley. *Id.*

Keiser I also explicitly discloses the claimed pulleys and cables. Keiser I's strength training apparatus has two arms **314** that have "a tubular structure through which the user cable **306** passes" and a "handle pulley assembly **316**" that is attached to the outer end of each arm "via a hinge connection." EX1006, 16:06-08. "The first end of the user cable **306** is threaded over the pulley of the handle pulley assembly **316** and one of the handles **12** is connected to this first end of the user cable." *Id.*, 16:18-20. Keiser I therefore discloses "a first pull cable routed through a first pulley; a second pull cable routed through a second pulley." EX1003, ¶ 132.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser I to the strength training apparatus in Verstegen. Accordingly, to the extent Patent Owner argues that this limitation is not explicitly disclosed in Verstegen, it would nonetheless have been obvious based on Verstegen in combination with Keiser I. *See* EX1003, ¶¶ 133, 149-164.

- c. **[51.2] and an electronic control panel configured to:
electronically allow for one or more levels of**

resistance to a user pulling on the first pull cable and/or the second pull cable,

As discussed in limitation [1.2], this claim element is obvious over Verstegen alone, or Verstegen in combination with Keiser II. EX1003 ¶ 134.

d. [51.3] electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable,

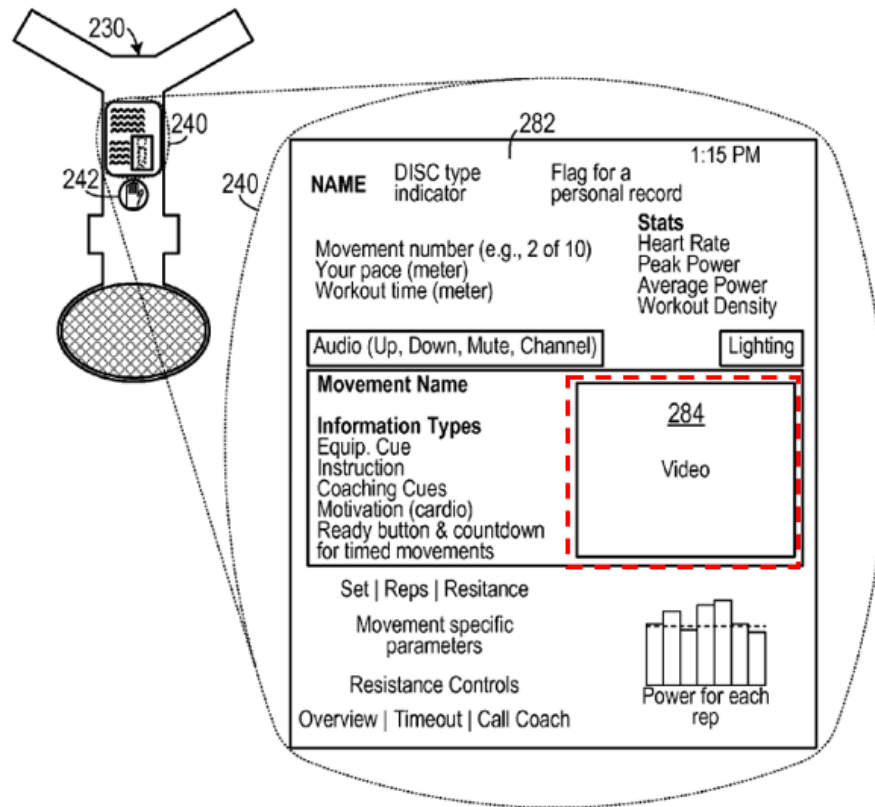
As discussed in limitation [1.3] this claim element is obvious over Verstegen alone, or Verstegen in combination with Keiser II. EX1003 ¶ 135.

e. [51.4] electronically present the adjusted level of resistance to the user,

As discussed in limitation [1.4] this claim element is obvious over Verstegen alone, or Verstegen in combination with Keiser II. EX1003 ¶ 136.

f. [51.5] and electronically receive input from the user to play an audiovisual program, and play the audiovisual program for the user.

Verstegen discloses this limitation. The electronic control panel disclosed in Verstegen includes a “audiovisual user interface **236** that is used to provide information to, and receive information from, the athlete **10**” and “can include a video display **240**” that can display information to the user. EX1005, ¶ 42. Specifically, as shown below in Figure 4, the display can show “video content **284** such as a video representation or an animation of someone demonstrating the current exercise assigned to the athlete.” *Id.*, ¶ 43.



EX1005, Fig. 4 (annotated). A POSA would therefore recognize electronic control panel in Verstegen is configured to electronically receive input from the user to play an audiovisual program and play the audiovisual program for the user. EX1003, ¶¶ 137-138.

7. Claim 54

- a. **[54.] The cable exercise machine of claim 51, wherein the electronic control panel is further configured to: electronically receive input from the user to execute a pre-programmed workout; and electronically execute the pre-programmed workout for the user.**

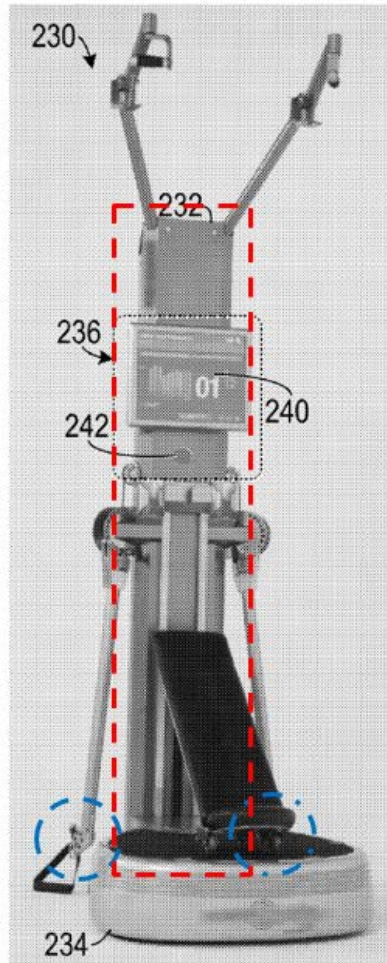
Verstegen (alone or in combination with Keiser I and/or II as described in claim 51) discloses this limitation. Verstegen describes that its system uses inputs

from the user (such as the user's fitness goals) to "generate a training prescription" for the user and "guide[] the [user] through a plurality of training sessions according to the prescription." EX1005, ¶ 22. The system "sets operating parameters on exercise equipment and receives data regarding the training sessions to monitor compliance with the prescription" *Id.* Based on these disclosures, a POSA would recognize that the electronic control panel in Verstegen is configured to electronically receive input from the user to execute a pre-programmed workout and electronically execute the pre-programmed workout for the user. EX1003, ¶ 139. Even if Patent Owner argues that this limitation is not explicitly disclosed in Verstegen, it would have been obvious to a POSA because electronic control panels that are configured to execute pre-programmed workouts based on user input (such as to meet a time or distance goal) were well-known in the art before the priority date of the '214 patent. EX1003, ¶ 140.

8. Claim 59

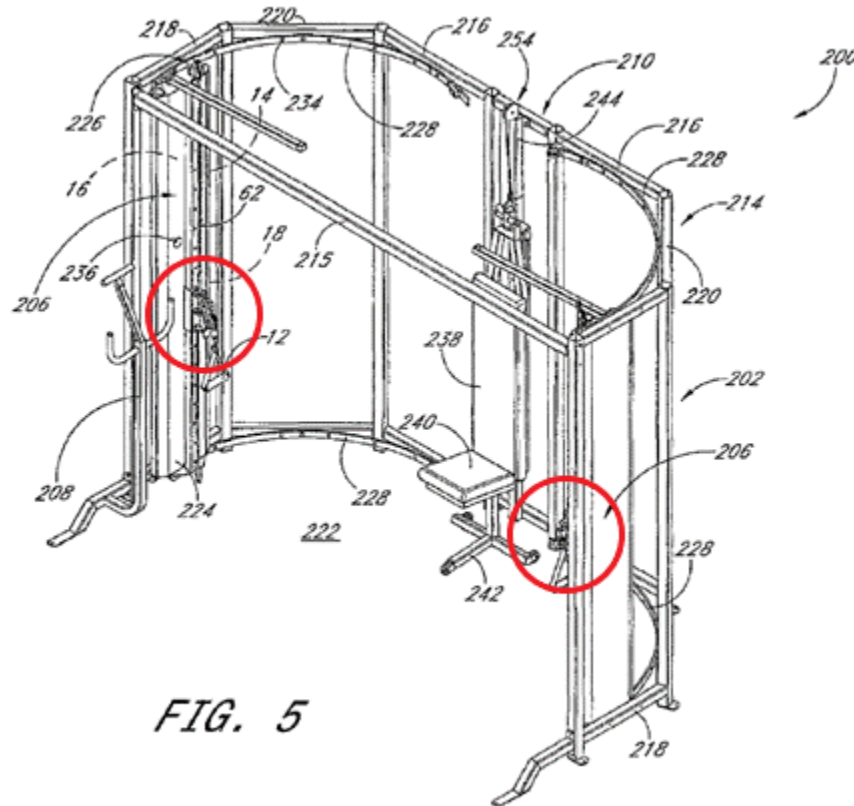
- a. **[59.] The cable exercise machine of claim 51, wherein: the cable exercise machine further comprises a frame; the first pulley is supported by the frame; and the second pulley is supported by the frame.**

Verstegen (alone or in combination with Keiser I and/or II as described in claim 51) discloses this limitation. Figure 8 of Verstegen depicts an embodiment of the strength training apparatus **230** that includes two pulleys (blue) supported by a frame (red):



EX1005, Fig. 8 (annotated). A POSA would recognize that the upright structure of the figure outlined in red constitutes a frame, and that the circled portions of the figure depicts a pulley. EX1003, ¶ 141. Though the end of the second arm is hidden out of view, a POSA would understand that a corresponding pulley would be attached to the end of the second arm to permit a user to perform an exercise simultaneously with both arms. EX1003, ¶ 142. Given these disclosures, a POSA would recognize that the cable machine disclosed in Verstegen includes two pulleys supported by a frame. *Id.*

Also, Keiser I explicitly discloses the claimed pulleys and frame. One embodiment “comprises a rigid station frame **202**” which supports two pulleys, as shown below:



EX1006, Fig. 5 (annotated); *see also* 12:57-59;13:60-14:38; EX1003, ¶ 143.

For the reasons stated in Section VIII(A)(1), it would have been obvious to a POSA to apply the disclosures of Keiser I to the strength training apparatus in Verstegen. Accordingly, to the extent that the pulleys and frame required by this claim limitation would not have been obvious based on Verstegen alone, they would nonetheless have been obvious based on Verstegen in combination with Keiser I. EX1003 ¶¶ 144, 149-164.

9. Claim 63

- a. **[63.] The cable exercise machine of claim 51, wherein: the cable exercise machine further comprises a first vertical guide; the first pulley is movable along a length of the first vertical guide; the cable exercise machine further comprises a second vertical guide; and the second pulley is movable along a length of the second vertical guide.**

As discussed in limitation [1.1], this claim element is obvious over Verstegen alone, or Verstegen in combination with Keiser I. EX1003 ¶ 145.

10. Claim 64

- a. **[64.] The cable exercise machine of claim 63, wherein: the first pulley is movable along the length of the first vertical guide to customize a workout for a height of the user; and the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user.**

As discussed in limitation [1.1], this claim element is obvious over Verstegen alone, or Verstegen in combination with Keiser I. In particular, Keiser I describes pulleys that are movable along tall vertical guides. EX1006, 5:54-59, 13:60-14:38, Fig. 5. A POSA would understand that these types of vertical guides permit the pulleys to be adjusted to different positions to accommodate varying heights of the user, and to make exercise more comfortable at different positions. EX1003, ¶ 146.

11. Claim 65

- a. **[65.] The cable exercise machine of claim 64, wherein: the first pulley is movable along the length of the first vertical guide to customize a workout for a desired target muscle group of the user; and the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user.**

As discussed in limitation [1.1], this claim limitation is obvious over Verstegen alone, or Verstegen in combination with Keiser I. In particular, Keiser I describes pulleys that are movable along vertical guides, EX1006, 5:54-59, 13:60-14:38, Fig. 5, permitting “the user to change the direction in which the user pushes or pulls during a set of the exercise repetitions,” *id.* at 4:29-34, thus allowing for “a wide variety of exercises to work various muscles or muscle groups with the same piece of equipment,” *id.* at 4:26-29. A POSA would understand that the disclosed vertical guides permit the pulleys to be adjusted to different positions in order to perform exercises that targeted different muscle groups. EX1003, ¶ 147.

12. Claim 66

- a. **[66.] The cable exercise machine of claim 64, wherein: the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine; and the second vertical guide extends from an upper right location of**

the cable exercise machine to a lower right location of the cable exercise machine.

As discussed in limitation [6], this claim limitation is obvious over Verstegen alone, or Verstegen in combination with Keiser I. EX1003 ¶ 148.

B. Ground 2: Claims 15-18, 26, 36, and 37 are unpatentable under § 103 over Verstegen in view of Keiser I and Keiser II in further view of Krementsov

1. Obviousness to a POSA

a. Motivation to Combine

As discussed in Ground 1, a POSA would have been motivated to combine Verstegen with Keiser I and/or II. A POSA would further have been motivated to combine Verstegen, Keiser I, and Keiser II with Krementsov. EX1003, ¶ 191. All four of these references are directed to the same field: strength training. *Id.*

Krementsov describes an improved dynamometer used to measure force, which is a foundational metric for strength training and understanding a user's performance while using a strength training device. EX1003, ¶ 192. Krementsov's improved dynamometer better shows "the nature of the force application, the health conditions, the strength, and other important characteristics of the user." EX1008, 1:45-47. Therefore, a POSA would have been motivated to use the dynamometer disclosed in Krementsov with the cable machine disclosed in Verstegen and/or Keiser I, and the software and control panels disclosed in Verstegen and/or Keiser II, to provide additional useful information to the user. EX1003, ¶ 192.

Verstegen and Keiser II both already disclose a control panel that displays information concerning a user's workout—including a user's power, which requires calculating a user's force—to provide health, fitness, and performance information to the user. EX1003, ¶ 193. A POSA would recognize that adding Kremmentsov's dynamometer to the apparatus/software combination described by Verstegen, Keiser I, and/or Keiser II would provide users with additional detail about their workouts and performance, for which there is a well-known demand in the fitness industry. *Id.*

b. Reasonable Expectation of Success

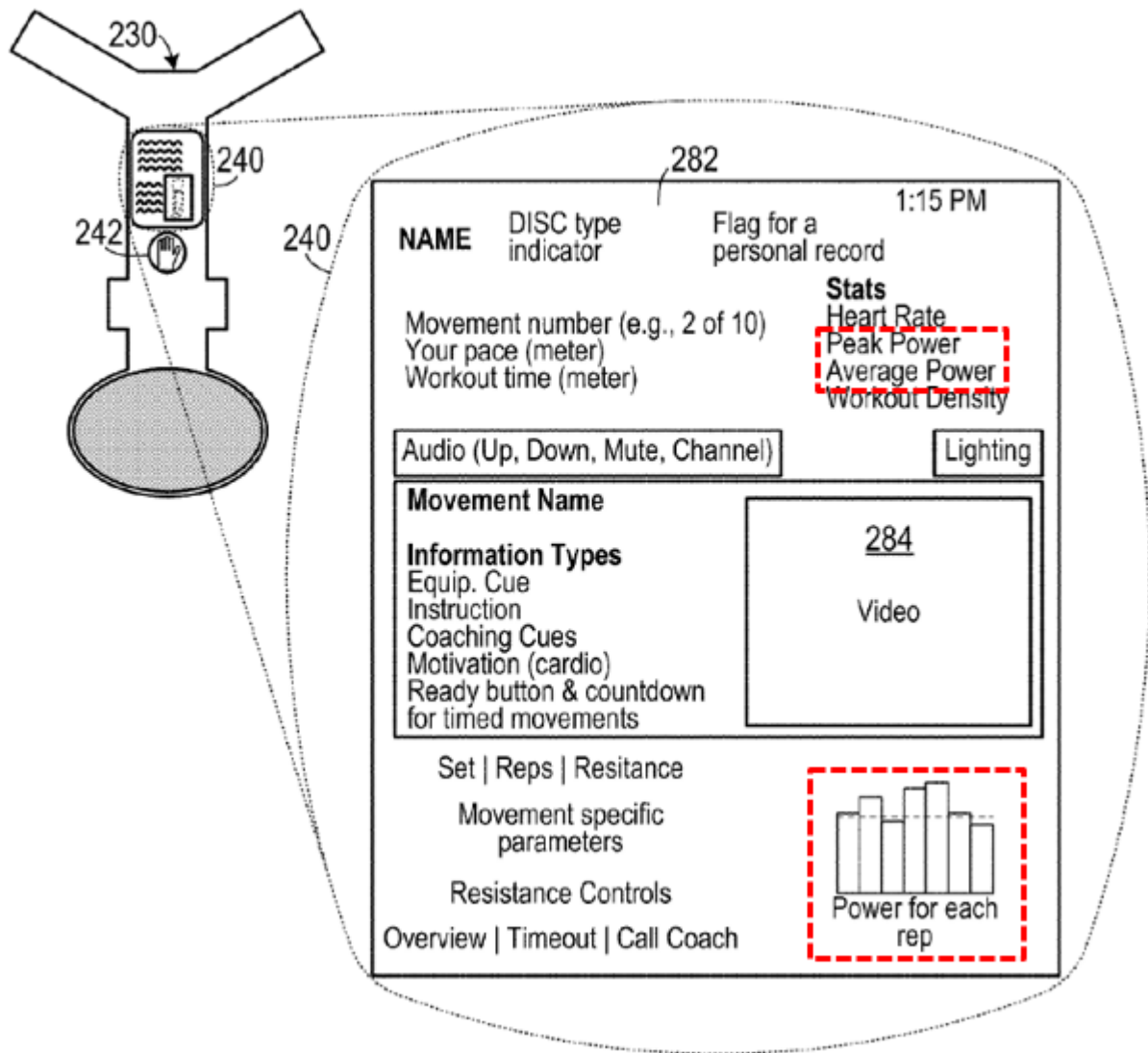
A POSA would also have had a reasonable expectation of success in combining the disclosures of Verstegen, Keiser I, Keiser II, and Kremmentsov. As discussed below, Verstegen and Keiser II both expressly disclose an electronic control panel that displays a user's power. Power and force are closely related concepts and, indeed, force is a part of the equation used to calculate power. EX1003, ¶ 194. Thus, even if Verstegen and Keiser II do not expressly disclose displaying force, they expressly disclose calculating force. *Id.* Because Kremmentsov discloses a dynamometer that measures the force applied by a user pulling on a pulling element, it would have been straightforward for a POSA to incorporate the dynamometer of Kremmentsov into cable machines using the software and display disclosed by Verstegen and/or Keiser II. EX1003, ¶ 195.

While Krementsov discloses that the information is recorded and displayed in a paper chart, it would have been straightforward for a POSA to modify the output of the dynamometer to be displayed on an electronic control panel, such as the ones described by Verstegen and Keiser II. EX1008, 2:27-41. EX1003, ¶ 195.

2. Claim 15:

- a. [15.] The cable exercise machine of claim 1, wherein the electronic control panel is further configured to electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of a workout.**

Verstegen (alone or in combination with Keiser I and/or II as described in Ground 1) discloses this limitation. Verstegen describes that its electronic control panel includes a screen **282** that can display “[the] average power exerted by the athlete (including a histogram showing the power exerted in each repetition),” as shown below. EX1005, ¶ 43.



EX1005, Fig. 4 (annotated). A POSA would understand that Verstegen's electronic control panel is displaying the power exerted by a user when pulling on the first and/or second cable. EX1003, ¶ 166. A POSA would further understand that power is the product of force and velocity, and that calculating and displaying power metrics will necessarily include a calculation of force. EX1003, ¶ 167. While Verstegen's display includes only power, and not force, it

would have been obvious to a POSA to display a user's force instead of power.

EX1003, ¶ 167.

Both power and force are useful metrics in assessing fitness or effectiveness of a workout. EX1003, ¶ 168. However, force is more understandable than power to a wider range of users. The average gym-goer understands force more intuitively because it more closely approximates weight (or weight equivalent), as compared to power. In the fitness industry, equipment users typically want information they can readily interpret about their workout, and therefore a POSA would be motivated to display force metrics in addition to power metrics. *Id.*

Krementsov also explicitly discloses this limitation. Krementsov discloses a dynamometer with a cable “to be pulled by a user” and “an indicating device which indicates a force applied by the user during the pulling of the pulling element.” EX1008, 1:30-40. Krementsov describes recording and displaying the user's force, including a chart showing “a magnitude of force applied over time,” on a strip-recorder. EX1008, 2:30-42. A POSA would recognize that the dynamometer disclosed in Krementsov displays a force exerted by the user during each pull of the pull cable. EX1003, ¶ 169.

For the reasons stated in Sections IX.B.8 and IX.B.9, it would have been obvious to a POSA to apply the disclosures of Krementsov to the apparatus and/or software disclosed in Verstegen, Keiser I, and Keiser II and for the graph of force

to be displayed on an electronic control panel, instead of as a paper chart.

Accordingly, to the extent that the electronic control panel configured to display a user's force exerted required by this limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I and/or Keiser II and in further view of Krementsov.

EX1003, ¶¶ 170, 191-195.

3. Claim 16

- a. **[16.] The cable exercise machine of claim 15, wherein the electronic control panel is further configured to electronically display a trend of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout.**

As discussed in claim 15, this claim element is obvious over Verstegen alone, or Verstegen in combination with Keiser I and/or II. A POSA would recognize that the histogram of power disclosed in Verstegen displays a trend of the power expended by the user during each pull on the cables of the cable machine. EX1003, ¶ 172. For the reasons discussed in claim 15, it would have been obvious to a POSA to display a trend of a user's force instead of power, e.g., as a histogram of force exerted during each repetition. *Id.*

Krementsov also explicitly discloses this limitation. The strip-chart disclosed in Krementsov "shows changes of a force applied by the user over time" to the pulling element of the device. EX1008, 2:36-37. Based on these

disclosures, a POSA would recognize that the dynamometer disclosed in Krementsov displays a trend of the force exerted by the user during each pull of the pull cable over a period of time. EX1003, ¶ 173.

For the reasons stated in Section VIII(B)(1), it would have been obvious to a POSA to apply the disclosures of Krementsov to the apparatus and/or software disclosed in Verstegen, Keiser I, and Keiser II and for the graph of force to be displayed on an electronic control panel, instead of as a paper chart. Accordingly, to the extent that the electronic control panel configured to display a trend of a user's force exerted required by this claim limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination with Keiser I and/or Keiser II and in further view of Krementsov. EX1003, ¶¶ 174, 191-195.

4. Claim 17

- a. [17.] The cable exercise machine of claim 15, wherein the electronic control panel is further configured to electronically display a graph of the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout.**

As discussed in claim 16, this claim element is obvious over Verstegen alone, or Verstegen in combination with Keiser I and/or II. A POSA would recognize that the histogram of power disclosed in Verstegen constitutes a graph of the power expended by the user during each pull on the cables of the cable

machine. EX1003, ¶ 176. For the reasons discussed in claim 15, it would have been obvious to a POSA to display a graph of a user's force instead of power. *Id.*

Krementsov also explicitly discloses this limitation. The strip-chart recorder disclosed in Krementsov “produces a chart” that “shows changes of a force applied by the user over time” to the pulling element of the device. EX1008, 2:36-37.

Id., Fig. 2. A POSA would recognize that the chart described in Krementsov provides a graph of the force exerted by the user during each pull of the cable over a period of time. EX1003, ¶ 177.

For the reasons stated in Sections IX.B.8 and IX.B.9, it would have been obvious to a POSA to apply the disclosures of Krementsov to the apparatus and/or software disclosed in Verstegen, Keiser I, and Keiser II and for the graph of force to be displayed on an electronic control panel, instead of as a paper chart.

Accordingly, to the extent that the electronic control panel configured to display a graph of a user's force exerted required by this claim limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination Keiser I and/or Keiser II and in further view of with Krementsov. EX1003, ¶¶ 178, 191-195.

5. Claim 18

- a. [18.] The cable exercise machine of claim 17, wherein the graph depicts the force exerted by the user at the**

beginning of the workout versus the end of the workout.

As discussed in claim 17, this claim element is obvious over Verstegen alone, or Verstegen in combination with Keiser I and/or II. A POSA would recognize that a “graph that depicts the force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of the workout” would necessarily also depict “the force exerted by the user at the beginning of the workout versus the end of the workout.” EX1003, ¶ 180.

Krementsov also explicitly discloses this limitation. As discussed in claim 17, Krementsov discloses displaying a graph of the user’s force exerted over the course of a workout. EX1003, ¶ 181. A POSA would understand that a graph of the user’s force exerted over the course of a workout necessarily depicts the force exerted by the user at the beginning versus the end of the workout. *Id.*

For the reasons stated in Sections IX.B.8 and IX.B.9, it would have been obvious to a POSA to apply the disclosures of Krementsov to the apparatus and/or software disclosed in Verstegen, Keiser I, and Keiser II and for the graph of force to be displayed on an electronic control panel, instead of as a paper chart.

Accordingly, to the extent that the electronic control panel configured to display a graph depicting a user’s force exerted at the beginning versus the end of a workout required by this claim limitation would not have been obvious based on Verstegen alone, it would nonetheless have been obvious based on Verstegen in combination

with Keiser I and/or Keiser II and in further view of Kremmentsov. EX1003, ¶¶ 182, 191-195.

6. Claim 26

a. [26.P] A cable exercise machine comprising:

As discussed in Ground 1 limitation [1.P], Verstegen, alone or in combination with Keiser I, discloses this limitation. EX1003 ¶ 183.

b. [26.1] a first pull cable routed through a first pulley; a second pull cable routed through a second pulley;

As discussed in Ground 1 limitation [51.1], Verstegen, alone or in combination with Keiser I, discloses this limitation. EX1003 ¶ 184.

c. [26.2] and an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable

As discussed in Ground 1 limitation [1.2], Verstegen, alone or in combination with Keiser II, discloses this limitation. EX1003 ¶ 185.

d. [26.3] electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable,

As discussed in Ground 1 limitation [1.3], Verstegen, alone or in combination with Keiser II, discloses this limitation. EX1003 ¶ 186.

- e. **[26.4] electronically present the adjusted level of resistance to the user,**

As discussed in Ground 1 limitation [1.4], Verstegen, alone or in combination with Keiser II, discloses this limitation. EX1003 ¶ 187.

- f. **[26.5] and electronically display a force exerted by the user during each pull of the first pull cable and/or the second pull cable over the course of a workout.**

As discussed in limitation [15], Verstegen, alone or in combination with Keiser I, Keiser II, and/or Krementsov, discloses this limitation. EX1003 ¶ 188.

7. Claim 36

- a. **[36.] The cable exercise machine of claim 26, wherein: the cable exercise machine further comprises a first vertical guide; the first pulley is movable along a length of the first vertical guide; the cable exercise machine further comprises a second vertical guide; and the second pulley is movable along a length of the second vertical guide.**

As discussed in Ground 1 limitation [1.1] and limitation 26, Verstegen, alone or in combination with Keiser I, Keiser II, and/or Kremenstov, discloses this limitation. EX1003 ¶ 189.

8. Claim 37

- a. **[37.] The cable exercise machine of claim 36, wherein: the first pulley is movable along the length of the first vertical guide to customize the workout for a height of the user; and the second pulley is movable along the**

length of the second vertical guide to customize the workout for the height of the user.

As discussed in Ground 1 limitations [1.1] and [64], and claim 26, Verstegen, alone or in combination with Keiser I, Keiser II, and/or Kremenstov, discloses this limitation. EX1003 ¶ 190.

C. Ground 3: Claims 51, 54, and 59 are unpatentable under § 103 over Lim

1. Claim 51

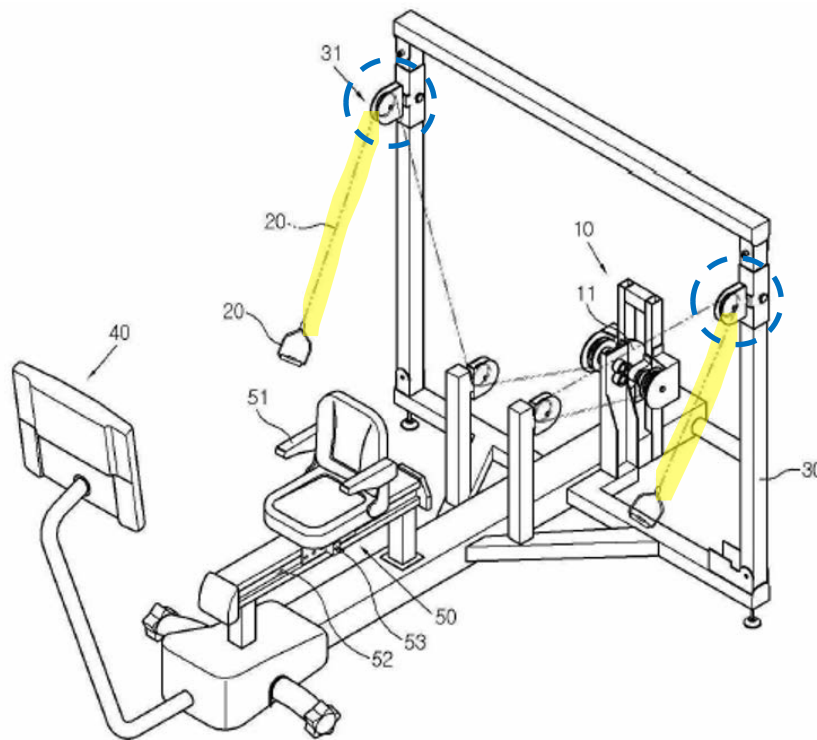
a. [51.P] A cable exercise machine comprising:

To the extent the preamble is limiting, Lim discloses this limitation. Lim discloses an “exercise apparatus,” EX1009, ¶ 1, with two pull cables. EX1009, ¶ 16. A POSA would understand that the exercise apparatus in Lim is a cable exercise machine. EX1003, ¶ 196.

b. [51.1] a first pull cable routed through a first pulley; a second pull cable routed through a second pulley;

Lim discloses this limitation. Lim describes that the apparatus includes two pull cables (yellow), each routed through a pulley (blue) “such that the user can exercise with both hands”:

Fig. 4



EX1009, ¶ 20, Fig. 4 (annotated). Based on these disclosures, a POSA would recognize that Lim describes “a first pull cable routed through a first pulley” and “a second pull cable routed through a second pulley.” EX1003, ¶ 197.

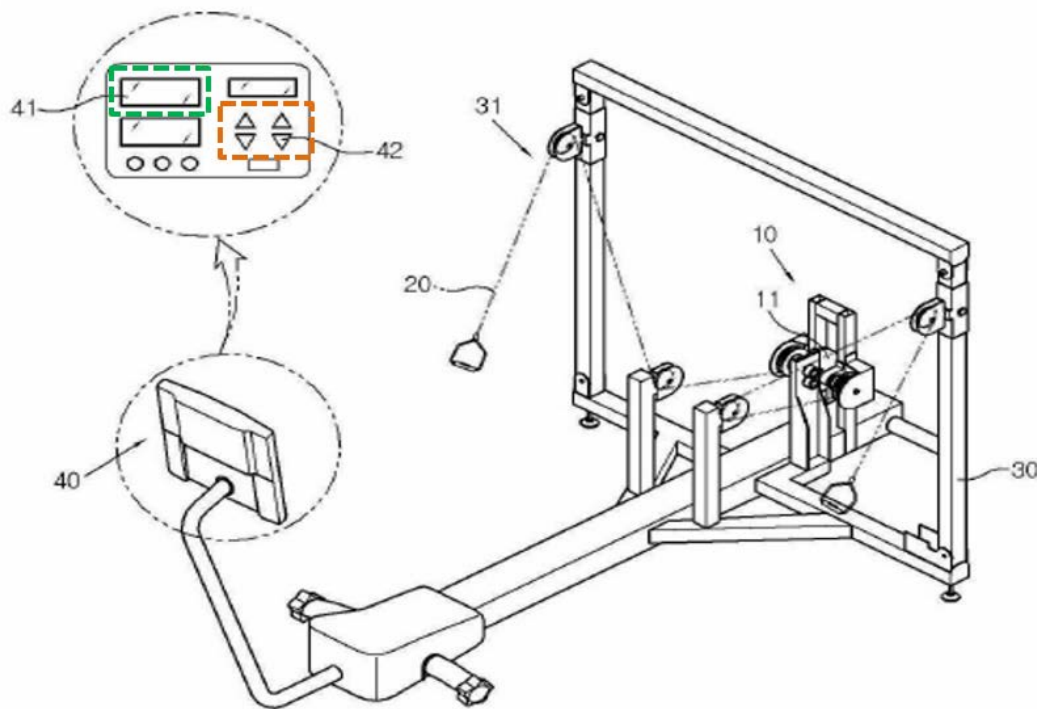
- c. **[51.2] and an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable,**

Lim discloses this limitation. Lim discloses an “exercise control device” which “display[s] the user’s state of exercise and comprises a function capable of mechanically or electronically setting the intensity of exercise.” EX1009, ¶ 23.

This is accomplished by sending a “value set for the exercise intensity . . . from the

exercise control device” to the “electrical load device” which “generate[s] a suitable electric load.” *Id.*, ¶ 18. Lim further describes that increasing the load applied by the electrical load device increases the resistance to the user pulling on the cable. EX1009 ¶ 18. Figure 2 of Lim depicts an embodiment of the exercise apparatus that includes an exercise control device **40** with a display **41** (green) and inputs **42** (orange).

Fig. 2



EX1009, Fig. 2 (annotated). Based on these disclosures, a POSA would recognize that Lim describes “an electronic control panel configured to: electronically allow for one or more levels of resistance to a user pulling on the first pull cable and/or the second pull cable.” EX1003, ¶ 198.

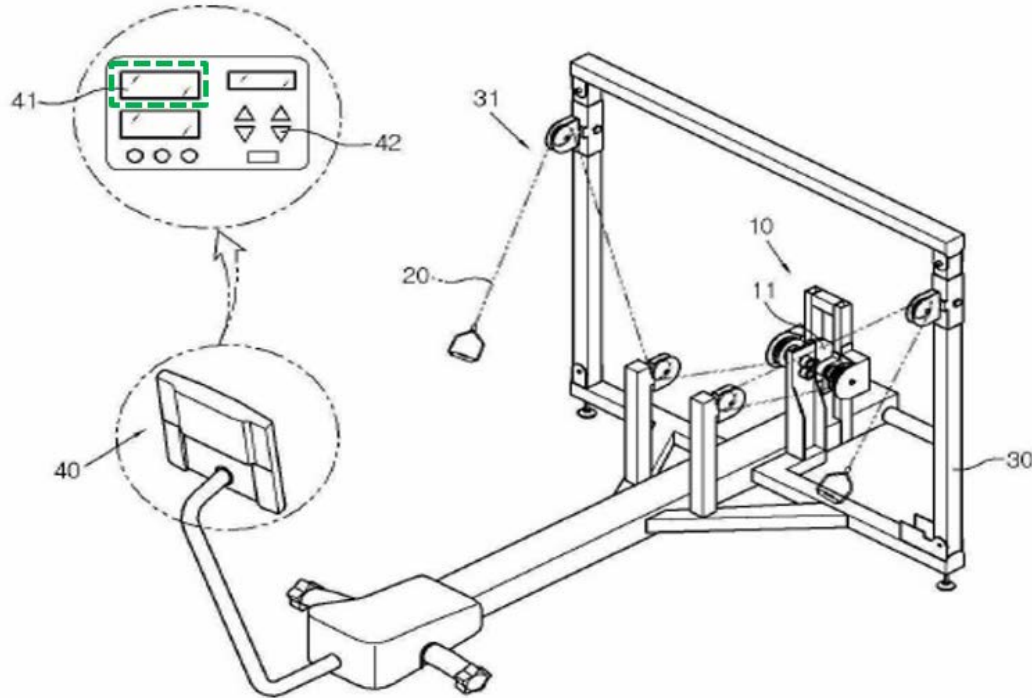
d. [51.3] electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable,

Lim discloses this limitation. Lim describes that the exercise control device “may comprise . . . a setting input unit (42),” which allows users to “directly input and set values” such as workout time and intensity. EX1009 ¶¶ 23, 25. Lim discloses that the user can also input resistance levels on the setting input unit, which are then “transmitted to the electrical load device (10), and the electrical load device (10) receives the transmitted electronic signal to adjust the resistance.” EX1009, ¶ 25. Based on these disclosures, a POSA would recognize that Lim discloses an electronic control panel configured to electronically receive input from the user to adjust the level of resistance to the user pulling on the first pull cable and/or the second pull cable. EX1003, ¶¶ 200-201.

e. [51.4] electronically present the adjusted level of resistance to the user,

Lim discloses this limitation. Lim describes that the exercise control device “may comprise a display unit (41).” EX1009, ¶ 23. Lim describes that the “display unit (41) performs a function for displaying the current state of exercise.” *Id.*, ¶ 24, making it “convenient for the user to see and set the value” for intensity of exercise, *Id.*, ¶ 23, which a POSA would understand includes the level of resistance, EX1003, ¶ 202. The display unit 41 is depicted in Figure 2 of Lim.

Fig. 2



EX1009, Fig. 2 (annotated). Based on these disclosures, a POSA would recognize that Lim discloses an electronic control panel configured to electronically present the adjusted level of resistance to the user. EX1003, ¶ 202.

f. [51.5] and electronically receive input from the user to play an audiovisual program, and play the audiovisual program for the user.

Lim discloses this limitation. Lim describes that the display unit **41** of the exercise control device **40** “may further comprise a TV reception device, a display device, and the like, to further increase efficiency during exercise that lasts for an extended period of time.” *Id.*, ¶ 24. A POSA would recognize that a TV display device or similar would play an audiovisual program, and that a control panel with

user inputs that includes a display device that can play an audiovisual program would have an input for playing an audiovisual program. EX1003, ¶ 203. Based on these disclosures, a POSA would recognize that Lim discloses an electronic control panel configured to receive input from the user to play an audiovisual program and play an audiovisual program. *Id.*

2. Claim 54

- a. **[54.] The cable exercise machine of claim 51, wherein the electronic control panel is further configured to: electronically receive input from the user to execute a pre-programmed workout; and electronically execute the pre-programmed workout for the user.**

Lim discloses this limitation. Lim describes that the user of the exercise apparatus “can set a target value, such as exercise time and exercise distance, and input the value to perform exercise suitable for his or her goal.” EX1009, ¶ 25. A POSA would recognize that inputting parameters such as time and distance, which the exercise apparatus executes, constitutes a pre-programmed workout. EX1003, ¶ 204. Based on these disclosures, a POSA would recognize that Lim discloses an electronic control panel configured to receive input from the user to execute a pre-programmed workout and electronically execute the pre-programmed workout for the user. *Id.*

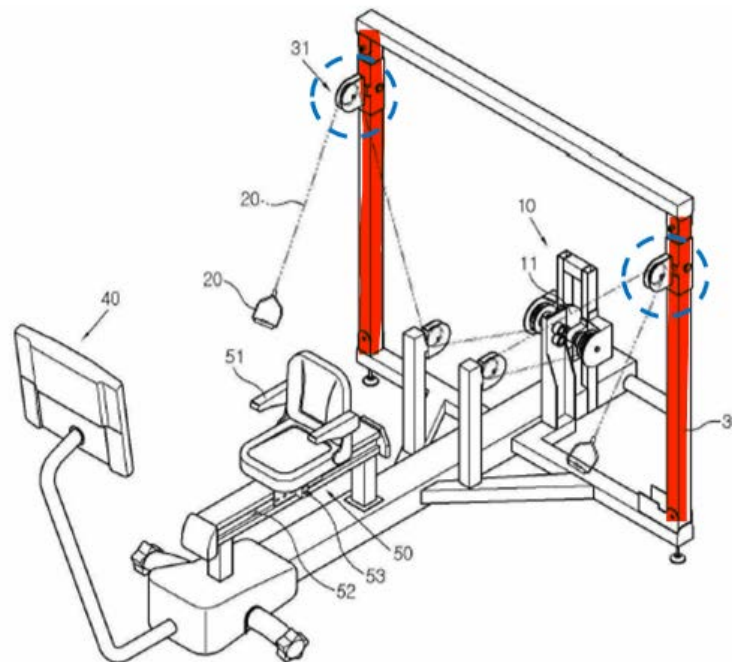
3. Claim 59

- a. **[59.] The cable exercise machine of claim 51, wherein: the cable exercise machine further comprises a frame;**

the first pulley is supported by the frame; and the second pulley is supported by the frame.

Lim discloses this limitation. Lim describes that the exercise apparatus has a “support (30) [] in the form of a column” and “a pulley (31).” EX1009, ¶ 20. The pulley (31) (blue) “may be provided in a pair on the left and right sides of the support (30)” (red) “such that the user can exercise with both hands, and two or more pairs may be provided as needed”:

Fig. 4



Id., Fig. 4 (annotated). A POSA would recognize that the support **30** is part of a frame which supports the two pulleys on opposite sides of the frame. EX1003, ¶ 205. Based on these disclosures, a POSA would recognize that Lim discloses a cable machine with a frame that supports two pulleys. *Id.*

D. Ground 4: Claims 63-66 are unpatentable under § 103 over Lim in view of Gvoich

1. Obviousness to a POSA

a. Motivation to Combine

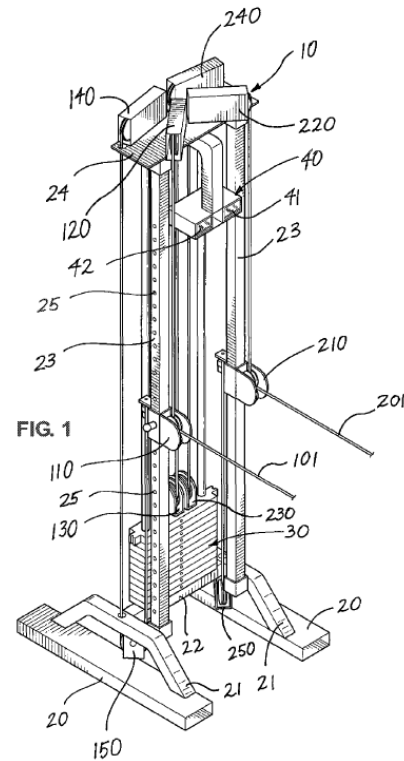
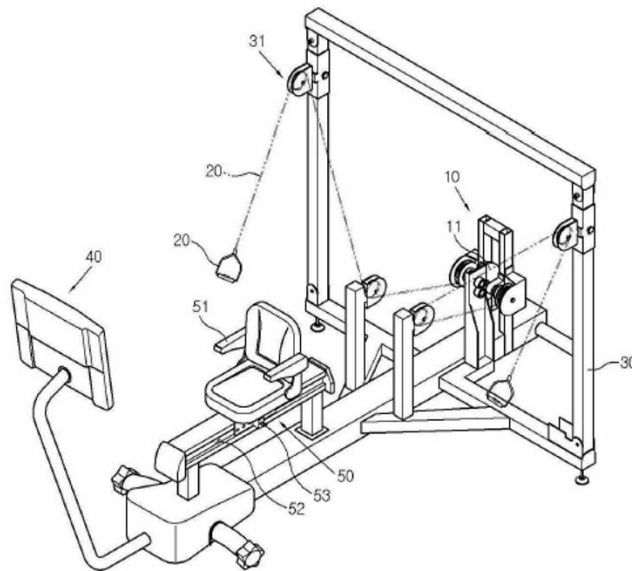
A POSA would have been motivated to combine Lim with Gvoich. EX1003, ¶¶ 220-221. Both Lim and Gvoich are directed to fitness equipment generally and cable machines specifically. *Id.*, ¶ 220. Gvoich expressly discloses that its invention, “multi-cable and pulley linkage assemblies attached to a single load,” can be applied to a cable machine with “electromagnetic” means of resistance. EX1010, ¶¶ 4, 65. Lim describes a cable machine with an electromagnetic resistance mechanism, EX1009, ¶ 18, and thus, a POSA would recognize that the teachings of Gvoich can be applied to Lim. EX1003, ¶ 220. Moreover, as described in Section VII(A), the dual-track design described by Gvoich was well known in the art and provided known benefits to users. EX1003, ¶ 221. A POSA would have known that the dual-track design was one of a finite number of options for a cable machine designed to enable multiple exercises in minimal space, and would have been motivated to choose this design based on aesthetic or functional preferences. *Id.*

b. Reasonable Expectation of Success

A POSA would also have had a reasonable expectation of success in combining the disclosures of Lim with Gvoich. EX1003, ¶¶ 222-223. Lim (below

left) and Gvoich (below right) both disclose cable machines comprising a frame with two columns and two pulleys attached to each column:

Fig. 4



EX1009, Fig. 4; EX1010, Fig. 1; *see also* EX1003, ¶ 222. A POSA would recognize that the basic mechanical structure of the frames of these two machines is functionally interchangeable and could easily be combined. *Id.* Further, as explained above, Gvoich expressly discloses that its teachings can be incorporated into a cable machine with electromagnetic means of resistance, EX1010, ¶ 4, such as that found in Lim, EX1009, ¶ 18. It therefore would have been a matter of ordinary intuition and common sense for a POSA to add the transverse bores and adjustable pulleys disclosed in Gvoich, EX1010, ¶ 35, to the vertical supports disclosed in Lim. EX1003, ¶ 223.

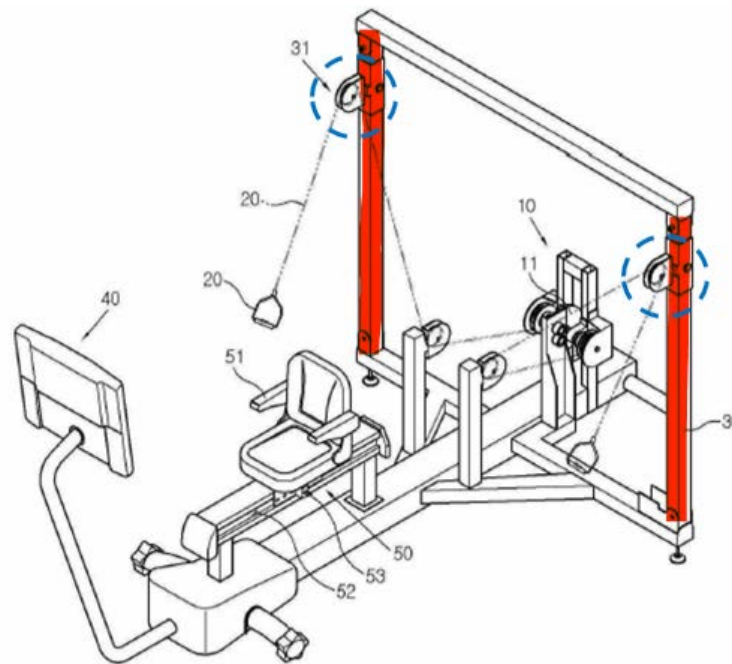
2. Claim 63

- a. [63.] The cable exercise machine of claim 51, wherein: the cable exercise machine further comprises a first vertical guide; the first pulley is movable along a length of the first vertical guide; the cable exercise machine further comprises a second vertical guide; and the second pulley is movable along a length of the second vertical guide.

Lim in combination with the knowledge of a POSA discloses this limitation.

As discussed in Ground 3 limitation [51.1] and claim 59, Lim discloses two pulleys (blue) mounted to two columns (red), as shown below in Figure 4:

Fig. 4



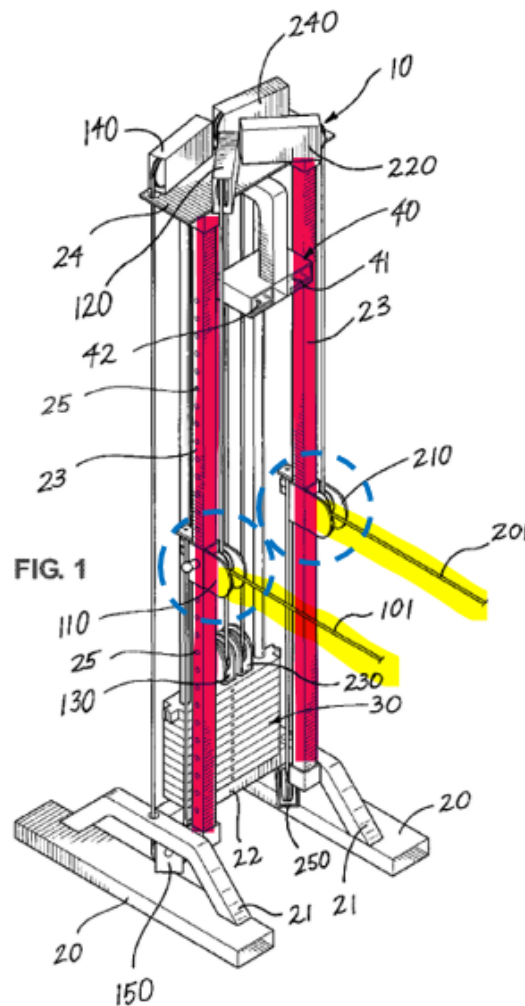
EX1009, Fig. 4 (annotated). Lim explains that this configuration is advantageous because “the user can freely choose the area to be affected during exercise to maximize the effect of aerobic exercise,” as “the connection portion between the

pulley (31) and the support (30) is provided in a manner that it can rotate freely such that the user can exercise freely, allowing the user to freely select the reciprocating path of the cable (20).” EX1009, ¶ 20. A POSA would further recognize that the transverse holes could have been added along some or all of the length of the vertical columns of the support **30**. A POSA would also recognize that holes shown on the side of the brackets coupling the pulleys to the columns could have been easily modified to be the selector knob/dowel mechanisms of a typical dual-track cable machine, which can be used to slide the pulleys up and down on the support. EX1003, ¶ 208.

Even if Lim did not expressly disclose this limitation, it would have been obvious to a POSA that the pulleys could have been movable along the vertical columns **30** with minimal modification. EX1003, ¶ 209. As described in Section VII(A), the dual-track design was well known in the art and provided known benefits to users. *Id.* Moreover, making the pulleys movable would help further facilitate Lim’s desire to allow the user to “freely” choose among various exercises and cable positions. EX1009, ¶ 20; EX1003, ¶ 209. It therefore would have been obvious to a POSA to incorporate the dual-track design into the cable machine disclosed in Lim. *Id.*

Gvoich also discloses this limitation. The cable machine disclosed in Gvoich features cables routed through two movable pulley assemblies that

adjustably move along the length of two vertical columns. EX1010, ¶¶ 35-36. The “vertical frame column members” include “a plurality of spaced-apart transverse bores **25**” that permit the pulley assemblies to move up and down the columns. EX1010, ¶ 35. The cable machine and the adjustable pulleys **110** and **210** are depicted in Figure 1:



Id., Fig. 1 (annotated). A POSA would recognize that the vertical frame column members and the adjustable pulley assemblies described in Gvoich constitute two

pull cables routed through pulleys that move along the length of two vertical guides. EX1003, ¶ 210.

For the reasons stated in Section VIII(D)(1), it would have been obvious to a POSA to apply the disclosures of Gvoich to the cable machine in Lim. As described in section VII(A), the dual-track design was well known in the art and provided known benefits to users. EX1003, ¶ 211. It therefore would have been obvious for a POSA to modify the connection between the pulley 31 and the support 30 disclosed in Lim to permit the pulleys to move along the vertical length of the support to enable a wider variety of exercises to be performed as disclosed in Gvoich. *Id.* Accordingly, to the extent that movable pulleys mounted on vertical guides required by this claim limitation would not have been obvious based on Lim alone, it would nonetheless have been obvious based on Lim in combination with Gvoich. *Id.*

3. Claim 64

- a. **[64.] The cable exercise machine of claim 63, wherein: the first pulley is movable along the length of the first vertical guide to customize a workout for a height of the user; and the second pulley is movable along the length of the second vertical guide to customize the workout for the height of the user.**

As discussed in limitation [63], this limitation is obvious over Lim alone, or Lim in combination with Gvoich. In particular, Gvoich describes pulleys that are movable along vertical guides. EX1010 ¶¶ 35-36, Fig. 1. A POSA would

understand that such vertical guides permit the pulleys to be adjusted to different positions to accommodate varying heights of the user, and to make exercise more comfortable at different positions. EX1003, ¶ 213.

4. Claim 65

- a. **[65.] The cable exercise machine of claim 64, wherein: the first pulley is movable along the length of the first vertical guide to customize a workout for a desired target muscle group of the user; and the second pulley is movable along the length of the second vertical guide to customize the workout for the desired target muscle group of the user.**

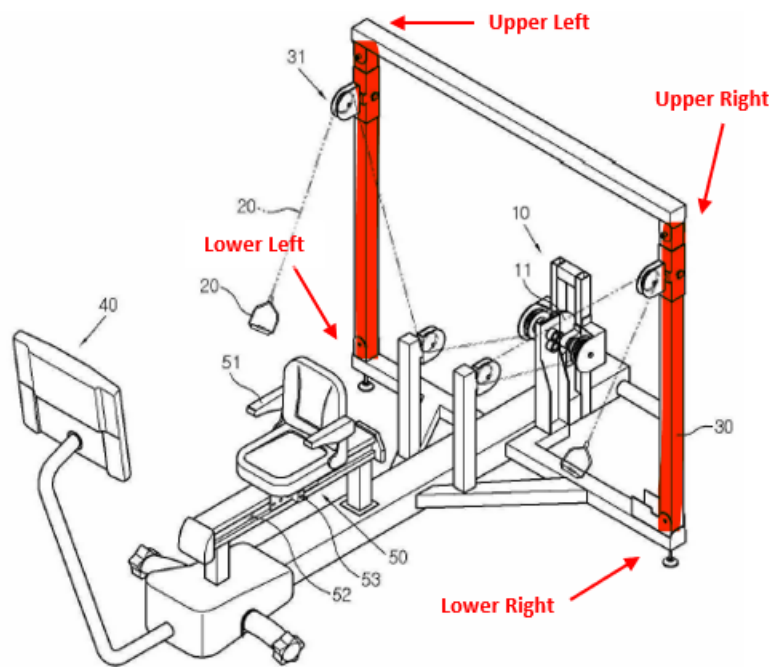
As discussed in element [63], this limitation is obvious over Lim alone, or Lim in combination with Gvoich. In particular, Gvoich describes pulleys that are movable along vertical guides. EX1010 ¶¶ 35-36, Fig. 1. A POSA would understand that such vertical guides permit the pulleys to be adjusted to different positions in order to perform exercises that target different muscle groups. EX1003, ¶ 215.

5. Claim 66

- a. **[66.] The cable exercise machine of claim 64, wherein: the first vertical guide extends from an upper left location of the cable exercise machine to a lower left location of the cable exercise machine; and the second vertical guide extends from an upper right location of**

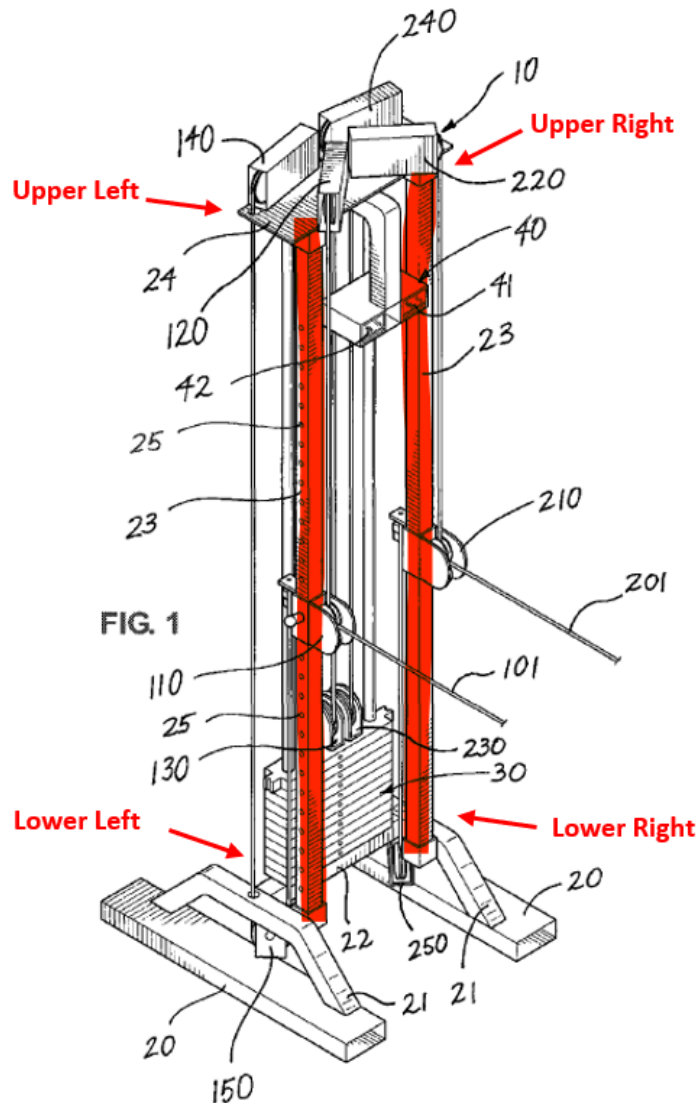
the cable exercise machine to a lower right location of the cable exercise machine.

As discussed in element [63], this limitation is obvious over Lim alone, or Lim in combination with Gvoich. The vertical guides disclosed in Lim extend from an upper left to a lower left location and an upper right to a lower right location, as shown below in Figure 4:



EX1009, Fig. 4 (annotated). As discussed in element [63], it would have been obvious to a POSA to incorporate movable pulleys into the machine discloses in Lim.

Gvoich also discloses that the two vertical frame column members are positioned in a vertical orientation on the left and right sides of the cable machine, as shown in Figure 1:



EX1010, Fig. 1 (annotated). A POSA would recognize that the vertical frame column members described in Gvoich extend from an upper left location to a lower left location and an upper right location to a lower right location of the cable machine. EX1003, ¶ 218.

For the reasons stated in Section VIII(D)(1), it would have been obvious to a POSA to apply the disclosures of Gvoich to the cable machine in Lim.

Accordingly, to the extent that the locations of the vertical guides required by this claim limitation would not have been obvious based on Lim alone, they would nonetheless have been obvious based on Lim in combination with Gvoich.

EX1003 ¶¶ 219.

IX. SECONDARY CONSIDERATIONS

Petitioner is unaware of any secondary considerations that may support the patentability of the challenged claims of the '214 patent set forth above. EX1003, ¶ 224. Petitioner reserves the right to respond to any allegations of secondary considerations that may be asserted by Patent Owner in this proceeding.

X. MANDATORY NOTICES (37 C.F.R. §42.8)

A. Real Party-In-Interest

The real party-in-interest for this petition is Tonal Systems, Inc.

B. Related Matters

The '214 patent is currently the subject of *iFIT Inc. v. Tonal Systems, Inc.*, No. 1:21-cv-00652 (D. Del.), which has been consolidated with *Tonal Systems, Inc. v. iFIT, Inc.*, Case No. 1:20-cv-01197-VAC-CJB (D. Del.).

C. Lead and Back-Up Counsel and Service Information

Petitioner hereby designates lead and back-up counsel as follows:

Lead Counsel	Backup Counsel
<p>Adam R. Brausa Reg. No. 60,287</p> <p>DURIE TANGRI LLP 217 Leidesdorff Street San Francisco, CA 94111 Tel: 415-362-6666 Fax: 415-236-6300 abrausa@durietangri.com</p>	<p>Joyce C. Li Reg. No. 75,937</p> <p>DURIE TANGRI LLP 217 Leidesdorff Street San Francisco, CA 94111 Tel: 415-362-6666 Fax: 415-236-6300 jli@durietangri.com</p>
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Pursuant to 37 C.F.R. §42.10(b), a Power of Attorney has been filed herewith. Service via hand delivery or postal mail may be made at the addresses of the lead and backup counsel above. Petitioner consents to electronic mail service at the email addresses above. Petitioner will request authorization to file motions

for Bethany D. Bengfort and Nari E.C. Ely to appear *pro hac vice* at the appropriate time.

XI. PAYMENT OF FEES (37 C.F.R. §§42.15(a) & 42.103)

The required fees are submitted herewith in accordance with 37 C.F.R. §§41.25(a) and 42.103(a).

XII. GROUNDS FOR STANDING (37 C.F.R. §§42.101, 42.104, & 42.108)

Petitioner certifies that the patent for which review is sought is available for *inter partes* review and that the Petitioner is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

XIII. CONCLUSION

Petitioner has demonstrated a reasonable likelihood that the challenged claims are obvious and therefore trial should be instituted.

Dated: May 5, 2022

Respectfully submitted,

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By: /Adam R. Brausa/

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*Petition for Inter Partes Review
of U.S. Patent No. 10,967,214*

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24, the undersigned attorney for the Petitioner declares that the argument section of this Petition (Sections I–IX, XIII) has a total of 13,978 words, according to the word count tool in Microsoft Word™.

Dated: May 5, 2022

By: /Adam R. Brausa/

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*Petition for Inter Partes Review
of U.S. Patent No. 10,967,214*

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(a), the undersigned hereby certifies that true and correct copies of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 10,967,214, including all exhibits, and related documents are being on May 5, 2022 via Federal Express to the correspondence address of record for the Patent Owner:

ICON Health & Fitness, Inc.
1500 South 1000 West
Logan, UT 84321

And, via electronic email upon counsel of record for Patent Owner in the litigation pending before the U.S. District Court of Delaware entitled *Tonal Systems, Inc. v. iFIT, Inc.*, Case No. 1:20-cv-01197-VAC-CJB as follows:

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EXHIBIT 21

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	15472954
	Filing Date	3/29/2017
	First Named Inventor	William T. Dalebout
	Art Unit	3764
	Examiner Name	LO, ANDREW S
	Attorney Docket Number	13-011.3

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U.S. PATENTS

Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1	RE33662E1		1991-08-13	Preston E. Blair et al.	
	2	RE34728E1		1994-09-13	Heartbeat Corp.	
	3	RE34959E1		1995-05-30	Lanny L. Potts	
	4	RE42698E1		2011-09-13	Nautilus, Inc.	
	5	RE44650E1		2013-12-17	Brent Anderson	
	6	RE46481E1		2017-07-18	Sony Corporation	
	7	9595		2/22/1853	JAMES MORELAND	
	8	9695		5/3/1853	RICHARD L. HINSDALE	
	9	34577		3/4/1862	SAMUEL JABDEN	
	10	104973		7/5/1870	CHARLES EoLBRooK MAN	
	11	115826		6/13/1871	GEORGE H. CREED	
	12	192338		6/26/1877	W. M. MARSHALL	
	13	232022		9/7/1880	J. H. & G. H. GIFFORD	
	14	232579		9/21/1880	J. H. WEEKS	
	15	248121		10/11/1881	E. A. TUTTLE	
	16	284294		9/4/1883	ORIEL M. GRAVES	
	17	321388		6/30/1885	J. E. RUEBSAM	
	18	325435		9/1/1885	s. G. NORTH	
	19	337942		3/16/1886	B. PARLEY	
	20	339638		4/13/1886	G. GOLDIE	
	21	348493		8/31/1886	F. V. GREENE	
	22	353089		11/23/1886	J. A. SMITH	
	23	356219		1/18/1887	W. PI. YEOMAN	
	24	359778		3/22/1887	W. H. H. PAUBER	
	25	372272		10/25/1887	E. W. MURPHY	
	26	374496		12/6/1887	R. REACH	
	27	421779		2/18/1890	WILLIAM X. STEVEN	
	28	428912		5/27/1890	M. HOLMES	
	29	447780		3/10/1891	O.J. LUGE	
	30	450792		4/21/1891	B. H. DODD	
	31	457400		8/11/1891	J. E. DOWD	
	32	470837		3/15/1892	C. W. HART	
	33	480271		8/9/1892	M.W. NEWTON	
	34	484352		10/11/1892	C.W. AYTON	
	35	549084		10/29/1895	J.F. WHITAKER	
	36	588350		8/17/1897	FRANK P. PERKINS	
	37	601307		3/29/1898	L. E. SALISBURY	

**INFORMATION DISCLOSURE STATEMENT
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Attorney Docket Number	13-011.3

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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1310	5313852		1994-05-24	Grumman Aerospace Corporation	
	1311	5313942		1994-05-24	Yakov Platzker	
	1312	5314389		1994-05-24	Simon Dotan	
	1313	5314390		1994-05-24	Stephen Westing et al.	
	1314	5314391		1994-05-24	Computer Sports Medicine, Inc.	
	1315	5314392		1994-05-24	Tranel Hawkins et al.	
	1316	5314394		1994-05-24	John J. Ronan	
	1317	5316534		1994-05-31	Proform Fitness Products, Inc.	
	1318	5318487		1994-06-07	Life Fitness	
	1319	5318490		1994-06-07	William C. Henderson et al.	
	1320	5318491		1994-06-07	Vincent Houston	
	1321	5318495		1994-06-07	Harry Malynowsky	
	1322	5320343		1994-06-14	John B. McKinney	
	1323	5320588		1994-06-14	Precor Incorporated	
	1324	5320591		1994-06-14	Larry S. Harmon et al.	
	1325	5322489		1994-06-21	Nautilus Acquisition Corporation	
	1326	5323650		1994-06-28	Fullen Systems, Inc.	
	1327	5323784		1994-06-28	Unisen, Inc.	
	1328	5324242		1994-06-28	Peter Kun-Chuan Lo	
	1329	5328410		1994-07-12	Today's Kids, Inc.	
	1330	5328420		1994-07-12	Temple W. Allen	
	1331	5328422		1994-07-12	Nichols Steven M	
	1332	5328428		1994-07-12	Shih-Pin Huang	
	1333	5328429		1994-07-12	Computer Sports Medicine, Inc.	
	1334	5328430		1994-07-12	Vittone Larry W	
	1335	5330401		1994-07-19	Orbiter Royalty Trust	
	1336	5330402		1994-07-19	Kimball W. Johnson	
	1337	5330404		1994-07-19	Joe A. Lopeteguy et al.	
	1338	5330405		1994-07-19	Pacific Fitness Corporation	
	1339	5330408		1994-07-19	Herbert L. Westmoreland, Jr.	
	1340	5334120		1994-08-02	Rasmussen Aaron P	
	1341	5335188		1994-08-02	Brisson Lawrence J	
	1342	5336142		1994-08-09	Proform Fitness Products, Inc.	
	1343	5336143		1994-08-09	Hong-Chi Wu	
	1344	5336144		1994-08-09	Precor Incorporated	
	1345	5336145		1994-08-09	Keiser Dennis L	
	1346	5336146		1994-08-09	Gary D. Piaget et al.	
	1347	5336148		1994-08-09	Vectra Fitness, Inc.	
	1348	5336151		1994-08-09	Paul Van Ballegooie	
	1349	5338274		1994-08-16	Jones Arthur A	

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U.S. PATENTS

Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	3101	7137644		2006-11-21	Kevin Kimberley	
	3102	7137931		2006-11-21	Wei Ming Liu	
	3103	7137932		2006-11-21	Doudiet Adam T	
	3104	7137935		2006-11-21	Raymond Clarke	
	3105	7137936		2006-11-21	Shaw Tracy K	
	3106	7139835		2006-11-21	Avago Technologies General Ip (Singapore) Pte. Ltd.	
	3107	7140626		2006-11-28	Peter W. Keay	
	3108	7141008		2006-11-28	Mark A. Krull et al.	
	3109	7148879		2006-12-12	At&T Corp.	
	3110	7150168		2006-12-19	Lambert Kuo	
	3111	7151214		2006-12-19	James Anthony Barry	
	3112	7153248		2006-12-26	Chih-Liang Chen	
	3113	7156776		2007-01-02	Donald Clifton Maser	
	3114	7156782		2007-01-02	Krull Mark A	
	3115	7156783		2007-01-02	Paul Chen	
	3116	7156808		2007-01-02	Roger J. Quy	
	3117	7156809		2007-01-02	Q-Tec Systems Llc	
	3118	7158938		2007-01-02	Xerox Corporation	
	3119	7163489		2007-01-16	Webb Nelson	
	3120	7163493		2007-01-16	Hai Pin Kuo	
	3121	7163498		2007-01-16	Kevin G. Abelbeck	
	3122	7163500		2007-01-16	Ken Endelman et al.	
	3123	7166062		2007-01-23	Icon Ip, Inc.	
	3124	7166064		2007-01-23	Icon Ip, Inc.	
	3125	7166066		2007-01-23	Randall T. Webber	
	3126	7166067		2007-01-23	Juvent, Inc.	
	3127	7168668		2007-01-30	Checkpoint Systems, Inc.	
	3128	7169087		2007-01-30	Icon Health & Fitness, Inc.	
	3129	7169088		2007-01-30	Rodgers Jr Robert E	
	3130	7169093		2007-01-30	Free Motion Fitness, Inc.	
	3131	7170016		2007-01-30	Dumomay Jean D	
	3132	7171331		2007-01-30	Curtis A. Vock et al.	
	3133	7172531		2007-02-06	Rodgers Jr Robert E	
	3134	7172536		2007-02-06	Wei Ming Liu	
	3135	7172538		2007-02-06	Keiser Corporation	
	3136	7175193		2007-02-13	Daniel P. H. Wu	
	3137	7178637		2007-02-20	Takashi Asano et al.	
	3138	7179207		2007-02-20	Stamina Products, Inc.	
	3139	7179208		2007-02-20	Mark Nalley	
	3140	7179209		2007-02-20	Scott Sechrest et al.	

**INFORMATION DISCLOSURE STATEMENT
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Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	3738	8033959		2011-10-11	Adidas Ag	
	3739	8033960		2011-10-11	Icon Ip, Inc.	
	3740	8033965		2011-10-11	Krull Mark A	
	3741	8034294		2011-10-11	Ideal Life, Inc.	
	3742	8037017		2009-03-12	Jonathan Samn	
	3743	8038577		2011-10-18	Mcintosh Tim	
	3744	8040758		2011-10-18	Elisabeth Dickinson	
	3745	8043173		2011-10-25	Nasrin Menalagha et al.	
	3746	8046803		2011-10-25	Wing K. Lee	
	3747	8047965		2011-11-01	Shea Michael J	
	3748	8047966		2011-11-01	Apple Inc.	
	3749	8047970		2011-11-01	Mark Nalley	
	3750	8052580		2011-11-08	Firstbeat Technologies Oy	
	3751	8052584		2011-11-08	Keiser Corporation	
	3752	8055469		2011-11-08	Christopher J. Kulach et al.	
	3753	8056687		2011-11-15	GM Global Technology Operations LLC	
	3754	8057360		2011-11-15	Shea Michael J	
	3755	8057367		2011-11-15	Cybex International, Inc.	
	3756	8057368		2011-11-15	Grzegorz Lyszcza	
	3757	8062182		2011-11-22	Tuffstuff Fitness Equipment, Inc.	
	3758	8062192		2011-11-22	Shawn Arstein	
	3759	8062196		2011-11-22	International Edge Inc.	
	3760	8065185		2011-11-22	At&T Intellectual Property I, L.P.	
	3761	8066514		2011-11-29	Clarke Mark A	
	3762	8070655		2011-12-06	Frank Napolitano	
	3763	8070657		2011-12-06	Andrew Robert Loach	
	3764	8072902		2011-12-06	Billy Moon	
	3765	8075453		2011-12-13	Wilkinson William T	
	3766	8078426		2011-12-13	Precor Incorporated	
	3767	8079939		2011-12-20	Leao Wang	
	3768	8082029		2011-12-20	Brunswick Corporation	
	3769	8083643		2011-12-27	Apple Inc.	
	3770	8083693		2011-12-27	Brian P. McKeon et al.	
	3771	8086421		2011-12-27	Nike Inc.	
	3772	8088043		2012-01-03	Nike, Inc.	
	3773	8088044		2012-01-03	Michael Tchao et al.	
	3774	8092351		2012-01-10	Robert E. Rodgers, Jr.	
	3775	8092381		2012-01-10	Heart Zones Usa	
	3776	8096926		2012-01-17	Roger Batca	
	3777	8101843		2012-01-24	Pacing Technologies Llc	

**INFORMATION DISCLOSURE STATEMENT
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Application Number	15472954
Filing Date	3/29/2017
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Art Unit	3764
Examiner Name	LO, ANDREW S
Attorney Docket Number	13-011.3

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U.S. PATENTS

Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	3897	8449620		2013-05-28	Gs Development Ab	
	3898	8452259		2013-05-28	Adidas Ag	
	3899	8454437		2013-06-04	Brian M. Dugan	
	3900	8454483		2013-06-04	Christopher Michael Bradley et al.	
	3901	8459479		2013-06-11	Sheldon E. Yourist	
	3902	8460001		2013-06-11	Thomas C. Chuang	
	3903	8460189		2013-06-11	Corventis, Inc.	
	3904	8475338		2013-07-02	Smalley Steel Ring Company	
	3905	8475346		2013-07-02	Stamina Products, Inc.	
	3906	8475367		2013-07-02	Shelten Gee Jao Yuen et al.	
	3907	8475370		2013-07-02	Sotera Wireless, Inc.	
	3908	8480541		2013-07-09	Randall Thomas Brunts	
	3909	8485576		2013-07-16	Robert MELVILLE et al.	
	3910	8485944		2013-07-16	Jeffrey M Drazan	
	3911	8485945		2013-07-16	Christoph Leonhard	
	3912	8485946		2013-07-16	Exemplar Design, Llc	
	3913	8485947		2013-07-16	Nash Nizam	
	3914	8485982		2013-07-16	Intercure Ltd.	
	3915	8485996		2013-07-16	Bioxtreme Ltd.	
	3916	8487759		2013-07-16	Matthew Hill	
	3917	8491446		2013-07-23	Kayo Technology, Inc.	
	3918	8491572		2013-07-23	Izex Technologies, Inc.	
	3919	8493822		2013-07-23	Adidas Ag	
	3920	8500608		2013-08-06	Rhiannon Corp.	
	3921	8503086		2013-08-06	Impulse Technology Ltd.	
	3922	8505597		2013-08-13	Michael Sharperson	
	3923	8506370		2013-08-13	Kristopher L. Homs	
	3924	8506457		2013-08-13	Mad Dogg Athletics, Inc.	
	3925	8506458		2013-08-13	Brian M. Dugan	
	3926	8506459		2013-08-13	Torque Fitness, Llc	
	3927	8512210		2013-08-20	Chair Trainer Ltd	
	3928	8512212		2013-08-20	Vectra Fitness, Inc.	
	3929	8515930		2013-08-20	Ricoh Company, Ltd.	
	3930	8516723		2013-08-27	Timothy S. Ferrigan et al.	
	3931	8517896		2013-08-27	Nike, Inc.	
	3932	8517899		2013-08-27	Yifeng Zhou	
	3933	8523743		2013-09-03	The Blue Rooster Inc.	
	3934	8523789		2013-09-03	Keiser Corporation	
	3935	8527038		2013-09-03	Sotera Wireless, Inc.	
	3936	8529415		2013-09-10	Tomas Svenberg	

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Art Unit	3764
Examiner Name	LO, ANDREW S
Attorney Docket Number	13-011.3

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	121	20030092533		2003-05-15	Joseph Hippensteel	
	122	20030092540		2003-05-15	Cybex International, Inc.	
	123	20030092542		2003-05-15	Ricky Bartholomew et al.	
	124	20030096675		2003-05-22	Leao Wang	
	125	20030096683		2003-05-22	Fenelon Paul J.	
	126	20030097878		2003-05-29	Jonathan Farrington et al.	
	127	20030100406		2003-05-29	Peter Millington	
	128	20030100413		2003-05-29	Chin-Lien Huang	
	129	20030100415		2003-05-29	David Augustine et al.	
	130	20030104907		2003-06-05	The Boeing Company	
	131	20030104908		2003-06-05	Tung Chang Huang	
	132	20030105390		2003-06-05	Nerio Alessandri	
	133	20030114276		2003-06-19	Schiff Jon D.	
	134	20030114281		2003-06-19	Mackert Ross A.	
	135	20030115157		2003-06-19	Edgar Circenis	
	136	20030115955		2003-06-26	Keiser Dennis L.	
	137	20030119635		2003-06-26	Arbuckle Michael M.	
	138	20030122384		2003-07-03	Roy Swanson et al.	
	139	20030125165		2003-07-03	Trevino Richard W.	
	140	20030126593		2003-07-03	Mault James R.	
	141	20030128186		2003-07-10	Kirk Laker	
	142	20030134714		2003-07-17	Konami Corporation	
	143	20030134718		2003-07-17	Kim Lee Jeong	
	144	20030138761		2003-07-24	Patrick Pesnell	
	145	20030139254		2003-07-24	Huang-Tung Chang	
	146	20030142951		2003-07-31	Yasuo Tsurugai	
	147	20030148853		2003-08-07	Nerio Alessandri	
	148	20030148857		2003-08-07	Yu Hui Nan	
	149	20030148862		2003-08-07	James Chen	
	150	20030149344		2003-08-07	Yaniv Nizan	
	151	20030153434		2003-08-14	Dalebout William T.	
	152	20030153436		2003-08-14	Shou-Shan Ho	
	153	20030153439		2003-08-14	Krull Mark A.	
	154	20030158014		2003-08-21	Javier Valentin-Sivico	
	155	20030158016		2003-08-21	Kolda Clint D.	
	156	20030158019		2003-08-21	Raymond Giannelli	
	157	20030158024		2003-08-21	Paul Saure	
	158	20030163287		2003-08-28	TVIPR LLC	
	159	20030165802		2003-09-04	Murphy Rick L.	
	160	20030166434		2003-09-04	Illinois Tool Works, Inc.	

**INFORMATION DISCLOSURE STATEMENT
BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	15472954
Filing Date	3/29/2017
First Named Inventor	William T. Dalebout
Art Unit	3764
Examiner Name	LO, ANDREW S
Attorney Docket Number	13-011.3

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	441	20050209062		2005-09-22	Brunswick Corporation	
	442	20050209887		2005-09-22	Richard Pollner	
	443	20050210169		2005-09-22	Ming-Fu Chou	
	444	20050212202		2005-09-29	Rpm Sports, Llc	
	445	20050213442		2005-09-29	Sony Corporation	
	446	20050215335		2005-09-29	Christian Marquardt	
	447	20050215397		2005-09-29	Watterson Scott R	
	448	20050221962		2005-10-06	Nautilus, Inc.	
	449	20050227811		2005-10-13	Nike, Inc.	
	450	20050227820		2005-10-13	Precor, Inc.	
	451	20050227826		2005-10-13	Takayuki Oga	
	452	20050227831		2005-10-13	Mills Alden M	
	453	20050227832		2005-10-13	Wu Shen Y	
	454	20050228245		2005-10-13	Q-Tec Systems Llc	
	455	20050228883		2005-10-13	Stephen Brown	
	456	20050229367		2005-10-20	Rocke Thompson	
	457	20050233859		2005-10-20	Motoyuki Takai	
	458	20050233861		2005-10-20	Hickman Paul L	
	459	20050233866		2005-10-20	Honda Motor Co., Ltd.	
	460	20050233871		2005-10-20	Anders Douglas H	
	461	20050233873		2005-10-20	James Chen	
	462	20050238182		2005-10-27	Tonic Fitness Technology, Inc.	
	463	20050239600		2005-10-27	Shin-Lung Liang	
	464	20050239601		2005-10-27	Tom Thomas	
	465	20050239607		2005-10-27	Chang Chih Y	
	466	20050239612		2005-10-27	Keiser Dennis L	
	467	20050240444		2005-10-27	Richard Wooten	
	468	20050245365		2005-11-03	Engelbert Rolli	
	469	20050245370		2005-11-03	Boland Kevin O	
	470	20050245431		2005-11-03	Sartorius Ag	
	471	20050248713		2005-11-10	Advanced Display Inc.	
	472	20050250619		2005-11-10	Carl Daikeler et al.	
	473	20050250622		2005-11-10	Huang-Tung Chang	
	474	20050261609		2005-11-24	6121438 Canada Inc.	
	475	20050266961		2005-12-01	Albert Shum et al.	
	476	20050269601		2005-12-08	Nec Compound Semiconductor Devices, Ltd.	
	477	20050272561		2005-12-08	Cammerata Gregory T	
	478	20050272562		2005-12-08	Nerio Alessandri et al.	
	479	20050272575		2005-12-08	Gianluca Melegati	
	480	20050272577		2005-12-08	Olson Michael L	

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1319	20090257323		2009-10-15	Ali Soltani	
	1320	20090258710		2009-10-15	Nike, Inc.	
	1321	20090258758		2009-10-15	Hickman Paul L	
	1322	20090258763		2009-10-15	Mark Richter	
	1323	20090262088		2009-10-22	Hector Moll-Carrillo et al.	
	1324	20090263772		2009-10-22	Tom Root	
	1325	20090264258		2009-10-22	Chiu Hsiang Lo	
	1326	20090264260		2009-10-22	Nautilus, Inc.	
	1327	20090265649		2009-10-22	Pumpone, Llc	
	1328	20090267783		2009-10-29	Apple Inc.	
	1329	20090269728		2009-10-29	Mark A. Verstegen et al.	
	1330	20090270226		2009-10-29	Watterson Scott R	
	1331	20090270234		2009-10-29	Technogym S.P.A.	
	1332	20090270743		2009-10-29	Dugan Brian M	
	1333	20090278707		2009-11-12	James F. Biggins et al.	
	1334	20090280964		2009-11-12	Michael Lin	
	1335	20090282080		2009-11-12	Pumpone, Llc	
	1336	20090286653		2009-11-19	Wiber Laurent	
	1337	20090292178		2009-11-26	Qualcomm Incorporated	
	1338	20090293319		2009-12-03	Arik Avni	
	1339	20090298649		2009-12-03	Precor Incorporated	
	1340	20090305852		2009-12-10	Tomas Svenberg	
	1341	20090309891		2009-12-17	Chris Demetrios Karkanias et al.	
	1342	20090312151		2009-12-17	Gil Thieberger	
	1343	20090312158		2009-12-17	Nautilus, Inc.	
	1344	20090312658		2009-12-17	Gil Thieberger	
	1345	20100003573		2010-01-07	Stmicroelectronics S.A.	
	1346	20100003647		2010-01-07	Wendell Brown et al.	
	1347	20100004104		2010-01-07	Gustafson Norman P	
	1348	20100005624		2010-01-14	Steven Swearingen	
	1349	20100009809		2010-01-14	Janice Carrington	
	1350	20100009810		2010-01-14	Michael Trzecieski	
	1351	20100015585		2010-01-21	Richard John Baker	
	1352	20100016127		2010-01-21	Avero Fitness, Llc	
	1353	20100016129		2010-01-21	Cheng I Chou	
	1354	20100016742		2010-01-21	James Terry L	
	1355	20100017402		2010-01-21	Nike, Inc.	
	1356	20100019593		2010-01-28	Exro Technologies Inc.	
	1357	20100022354		2010-01-28	John Fisher	
	1358	20100024590		2010-02-04	George David O'Neill	

**INFORMATION DISCLOSURE STATEMENT
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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1399	20100113222		2010-05-06	Radow Scott B	
	1400	20100113223		2010-05-06	Unisen, Inc., Dba Star Trac	
	1401	20100113948		2010-05-06	Imperial Innovations Limited	
	1402	20100120585		2010-05-13	Q-Tec Systems Llc	
	1403	20100125026		2010-05-20	Vyacheslav Zavadsky et al.	
	1404	20100125029		2010-05-20	Inner Body Fitness & Wellness	
	1405	20100125183		2010-05-20	Honeywell International Inc.	
	1406	20100130337		2010-05-27	Jeffrey Stewart	
	1407	20100137049		2010-06-03	Joseph Charles EPSTEIN	
	1408	20100137105		2010-06-03	Thomas McLaughlin	
	1409	20100137106		2010-06-03	Omron Healthcare., Co ., Ltd.	
	1410	20100137114		2010-06-03	Keiser Corporation	
	1411	20100144500		2010-06-10	Vincenzo Canali	
	1412	20100144501		2010-06-10	Nahome Berhanu	
	1413	20100146055		2010-06-10	Miska Hannuksela	
	1414	20100152546		2010-06-17	Julie Behan et al.	
	1415	20100156625		2010-06-24	Nokia Corporation	
	1416	20100156760		2010-06-24	At&T Intellectual Property I, L.P.	
	1417	20100160013		2010-06-24	Dean Sanders	
	1418	20100160014		2010-06-24	Mario Galasso et al.	
	1419	20100160115		2010-06-24	Unisen, Inc., Dba Star Trac	
	1420	20100164579		2010-07-01	Benjamin Acatrinei	
	1421	20100167801		2010-07-01	Microsoft Corporation	
	1422	20100167876		2010-07-01	Tzu Chi University	
	1423	20100167883		2010-07-01	Precor Incorporated	
	1424	20100173276		2010-07-08	Maxim Alexeevich Vasin	
	1425	20100173755		2010-07-08	P Erez De Lazarraga Pablo	
	1426	20100173759		2010-07-08	Nabile Lalaoua	
	1427	20100175634		2010-07-15	Master Maxs Health Technology Inc.	
	1428	20100178981		2010-07-15	Holcomb Paul L	
	1429	20100179032		2010-07-15	Perry David A	
	1430	20100179035		2010-07-15	Eric Scott Carnahan	
	1431	20100179883		2010-07-15	Teoco Corporation	
	1432	20100182436		2010-07-22	Bill Boman et al.	
	1433	20100184565		2010-07-22	Matthew Avellino	
	1434	20100184568		2010-07-22	Rowdy Arjan Schippers	
	1435	20100184570		2010-07-22	Tian-Jyue Cheng	
	1436	20100188405		2010-07-29	Apple Inc.	
	1437	20100190610		2010-07-29	Pryor Timothy R	
	1438	20100190615		2010-07-29	Accelerate Inc.	

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Application Number	15472954
Filing Date	3/29/2017
First Named Inventor	William T. Dalebout
Art Unit	3764
Examiner Name	LO, ANDREW S
Attorney Docket Number	13-011.3

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

- ☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

- ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ See attached certification statement.
- ☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Richard K. C. Chang II/	Date (YYYY-MM-DD)	2018-10-02
Name/Print	Richard K. C. Chang II	Registration Number	52719

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

EXHIBIT 22

Doc code: IDS

Approved for use through 07/31/2012.

Doc description: Information Disclosure Statement (IDS) Filed

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	15976496
	Filing Date	5/10/2018
	First Named Inventor	Michael L. Olson
	Art Unit	3784
	Examiner Name	GANESAN, SUNDHARA M
	Attorney Docket Number	13-025.4.2

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U.S. PATENTS						
Examiner Initials*	Cite No.	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1	9595		2/22/1853	JAMES MORELAND	
	2	9695		5/3/1853	RICHARD L. HINSDALE	
	3	34577		3/4/1862	SAMUEL JABDEN	
	4	104973		7/5/1870	CHARLES EoLBROOK MAN	
	5	115826		6/13/1871	GEORGE H. CREED	
	6	192338		6/26/1877	W. M. MARSHALL	
	7	232022		9/7/1880	J. H. & G. H. GIFFORD	
	8	232579		9/21/1880	J. H. WEEKS	
	9	248121		10/11/1881	E. A. TUTTLE	
	10	284294		9/4/1883	ORIEL M. GRAVES	
	11	321388		6/30/1885	J. E. RUEBSAM	
	12	325435		9/1/1885	s. G. NORTH	
	13	337942		3/16/1886	B. PARLEY	
	14	339638		4/13/1886	G. GOLDIE	
	15	348493		8/31/1886	F. V. GREENE	
	16	353089		11/23/1886	J. A. SMITH	
	17	356219		1/18/1887	W. PI. YEOMAN	
	18	359778		3/22/1887	W. H. H. PAUBER	
	19	372272		10/25/1887	E. W. MURPHY	
	20	374496		12/6/1887	R. REACH	
	21	421779		2/18/1890	WILLIAM X. STEVEN	
	22	428912		5/27/1890	M. HOLMES	
	23	447780		3/10/1891	O.J. LUGE	
	24	450792		4/21/1891	B. H. DODD	
	25	457400		8/11/1891	J. E. DOWD	
	26	470837		3/15/1892	C. W. HART	
	27	480271		8/9/1892	M.W. NEWTON	
	28	484352		10/11/1892	C.W. AYTON	
	29	549084		10/29/1895	J.F. WHITAKER	
	30	588350		8/17/1897	FRANK P. PERKINS	
	31	601307		3/29/1898	L. E. SALISBURY	
	32	603350		5/3/1898	EDMUND TOWERS	
	33	610716		9/13/1898	WILLIAM M. MARSHAL	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	15976496
	Filing Date	5/10/2018
	First Named Inventor	Michael L. Olson
	Art Unit	3784
	Examiner Name	GANESAN, SUNDHARA M
	Attorney Docket Number	13-025.4.2

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	108	20030060331		2003-03-27	Polk Louis F.	
	109	20030060344		2003-03-27	Varner David	
	110	20030060345		2003-03-27	Piane Robert A.	
	111	20030063133		2003-04-03	Fuji Xerox Co Ltd	
	112	20030065561		2003-04-03	International Business Machines Corporation	
	113	20030069108		2003-04-10	Rubinstein Michael	
	114	20030073545		2003-04-17	Pao-Pao Liu	
	115	20030078138		2003-04-24	Motoki Toyama	
	116	20030087737		2003-05-08	Steve Studdard	
	117	20030088196		2003-05-08	Epm Development Systems Corporation	
	118	20030089596		2003-05-15	Temple University Of The Commonwealth System Of Higher Education	
	119	20030092532		2003-05-15	Cybex International, Inc.	
	120	20030092533		2003-05-15	Joseph Hippensteel	
	121	20030092540		2003-05-15	Cybex International, Inc.	
	122	20030092542		2003-05-15	Ricky Bartholomew et al.	
	123	20030096675		2003-05-22	Leao Wang	
	124	20030096683		2003-05-22	Fenelon Paul J.	
	125	20030097878		2003-05-29	Jonathan Farrington et al.	
	126	20030100406		2003-05-29	Peter Millington	
	127	20030100413		2003-05-29	Chin-Lien Huang	
	128	20030100415		2003-05-29	David Augustine et al.	
	129	20030104907		2003-06-05	The Boeing Company	
	130	20030104908		2003-06-05	Tung Chang Huang	
	131	20030105390		2003-06-05	Nerio Alessandri	
	132	20030114276		2003-06-19	Schiff Jon D.	
	133	20030114281		2003-06-19	Mackert Ross A.	
	134	20030115157		2003-06-19	Edgar Circenis	
	135	20030115955		2003-06-26	Keiser Dennis L.	
	136	20030119635		2003-06-26	Arbuckle Michael M.	
	137	20030122384		2003-07-03	Roy Swanson et al.	
	138	20030125165		2003-07-03	Trevino Richard W.	
	139	20030126593		2003-07-03	Mault James R.	
	140	20030128186		2003-07-10	Kirk Laker	
	141	20030134714		2003-07-17	Konami Corporation	

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	First Named Inventor	Michael L. Olson
	Art Unit	3784
	Examiner Name	GANESAN, SUNDHARA M
	Attorney Docket Number	13-025.4.2

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U.S. PATENT APPLICATION PUBLICATIONS

Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	457	20050233859		2005-10-20	Motoyuki Takai	
	458	20050233861		2005-10-20	Hickman Paul L	
	459	20050233866		2005-10-20	Honda Motor Co., Ltd.	
	460	20050233871		2005-10-20	Anders Douglas H	
	461	20050233873		2005-10-20	James Chen	
	462	20050238182		2005-10-27	Tonic Fitness Technology, Inc.	
	463	20050239600		2005-10-27	Shin-Lung Liang	
	464	20050239601		2005-10-27	Tom Thomas	
	465	20050239607		2005-10-27	Chang Chih Y	
	466	20050239612		2005-10-27	Keiser Dennis L	
	467	20050240444		2005-10-27	Richard Wooten	
	468	20050245365		2005-11-03	Engelbert Rolli	
	469	20050245370		2005-11-03	Boland Kevin O	
	470	20050245431		2005-11-03	Sartorius Ag	
	471	20050248713		2005-11-10	Advanced Display Inc.	
	472	20050250619		2005-11-10	Carl Daikeler et al.	
	473	20050250622		2005-11-10	Huang-Tung Chang	
	474	20050261609		2005-11-24	6121438 Canada Inc.	
	475	20050266961		2005-12-01	Albert Shum et al.	
	476	20050269601		2005-12-08	Nec Compound Semiconductor Devices, Ltd.	
	477	20050272561		2005-12-08	Cammerata Gregory T	
	478	20050272562		2005-12-08	Nerio Alessandri et al.	
	479	20050272575		2005-12-08	Gianluca Melegati	
	480	20050272577		2005-12-08	Olson Michael L	
	481	20050274188		2005-12-15	Patrick Cabanis et al.	
	482	20050277520		2005-12-15	Richard Van Waes	
	483	20050277525		2005-12-15	Liu Wei M	
	484	20050281963		2005-12-22	Charles Cook	
	485	20050283051		2005-12-22	Yu-Yu Chen	
	486	20050283911		2005-12-29	Richard Roussy	
	487	20050288155		2005-12-29	Chung-Chin Yang	
	488	20050288954		2005-12-29	John McCarthy et al.	
	489	20060003869		2006-01-05	Johnson Tech. Co., Ltd.	
	490	20060003872		2006-01-05	Mark Chiles et al.	
	491	20060003876		2006-01-05	Francois Duhamel	

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	Filing Date	5/10/2018
	First Named Inventor	Michael L. Olson
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	Examiner Name	GANESAN, SUNDHARA M
	Attorney Docket Number	13-025.4.2

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Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1296	20090205482		2009-08-20	Katsuya Shirai et al.	
	1297	20090209393		2009-08-20	International Business Machines Corporation	
	1298	20090210078		2009-08-20	Michael James Crowley	
	1299	20090215594		2009-08-27	Jordan Panaiotov	
	1300	20090216629		2009-08-27	James Terry L	
	1301	20090217178		2009-08-27	Sourabh Niyogi et al.	
	1302	20090221404		2009-09-03	Apple Inc.	
	1303	20090221405		2009-09-03	Leao Wang	
	1304	20090221407		2009-09-03	Frauke Hauk	
	1305	20090227424		2009-09-10	Honda Motor Co., Ltd.	
	1306	20090227428		2009-09-10	Tamari Ran	
	1307	20090227429		2009-09-10	Baudhuin John R	
	1308	20090227432		2009-09-10	Icon Health & Fitness, Inc.	
	1309	20090232420		2009-09-17	Mikel Eisenberg et al.	
	1310	20090233769		2009-09-17	Timothy Pryor	
	1311	20090233771		2009-09-17	Danielle M. Quatrochi et al.	
	1312	20090238400		2009-09-24	Suk Bin Im	
	1313	20090239714		2009-09-24	Ty Sellers	
	1314	20090240858		2009-09-24	Haruyuki Takebayashi	
	1315	20090246746		2009-10-01	Forcelink B.V.	
	1316	20090247366		2009-10-01	Frumer John D	
	1317	20090247376		2009-10-01	Lindsay G. Merrithew et al.	
	1318	20090253109		2009-10-08	Mehran Anvari	
	1319	20090253554		2009-10-08	Mcintosh Tim	
	1320	20090257323		2009-10-15	Ali Soltani	
	1321	20090258710		2009-10-15	Nike, Inc.	
	1322	20090258758		2009-10-15	Hickman Paul L	
	1323	20090258763		2009-10-15	Mark Richter	
	1324	20090262088		2009-10-22	Hector Moll-Carrillo et al.	
	1325	20090263772		2009-10-22	Tom Root	
	1326	20090264258		2009-10-22	Chiu Hsiang Lo	
	1327	20090264260		2009-10-22	Nautilus, Inc.	
	1328	20090265649		2009-10-22	Pumpone, Llc	
	1329	20090267783		2009-10-29	Apple Inc.	
	1330	20090269728		2009-10-29	Mark A. Verstegen et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	15976496
	Filing Date	5/10/2018
	First Named Inventor	Michael L. Olson
	Art Unit	3784
	Examiner Name	GANESAN, SUNDHARA M
	Attorney Docket Number	13-025.4.2

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U.S. PATENT APPLICATION PUBLICATIONS						
Examiner Initials*	Cite No.	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, where relevant passages or Relevant Figures Appear
	1401	20100113223		2010-05-06	Unisen, Inc., Dba Star Trac	
	1402	20100113948		2010-05-06	Imperial Innovations Limited	
	1403	20100120585		2010-05-13	Q-Tec Systems Llc	
	1404	20100125026		2010-05-20	Vyacheslav Zavadsky et al.	
	1405	20100125029		2010-05-20	Inner Body Fitness & Wellness	
	1406	20100125183		2010-05-20	Honeywell International Inc.	
	1407	20100130337		2010-05-27	Jeffrey Stewart	
	1408	20100137049		2010-06-03	Joseph Charles EPSTEIN	
	1409	20100137105		2010-06-03	Thomas McLaughlin	
	1410	20100137106		2010-06-03	Omron Healthcare., Co ., Ltd.	
	1411	20100137114		2010-06-03	Keiser Corporation	
	1412	20100144500		2010-06-10	Vincenzo Canali	
	1413	20100144501		2010-06-10	Nahome Berhanu	
	1414	20100146055		2010-06-10	Miska Hannuksela	
	1415	20100152546		2010-06-17	Julie Behan et al.	
	1416	20100156625		2010-06-24	Nokia Corporation	
	1417	20100156760		2010-06-24	At&T Intellectual Property I, L.P.	
	1418	20100160013		2010-06-24	Dean Sanders	
	1419	20100160014		2010-06-24	Mario Galasso et al.	
	1420	20100160115		2010-06-24	Unisen, Inc., Dba Star Trac	
	1421	20100164579		2010-07-01	Beniamin Acatrinei	
	1422	20100167801		2010-07-01	Microsoft Corporation	
	1423	20100167876		2010-07-01	Tzu Chi University	
	1424	20100167883		2010-07-01	Precor Incorporated	
	1425	20100173276		2010-07-08	Maxim Alexeevich Vasin	
	1426	20100173755		2010-07-08	P Erez De Lazarraga Pablo	
	1427	20100173759		2010-07-08	Nabile Lalaoua	
	1428	20100175634		2010-07-15	Master Maxs Health Technology Inc.	
	1429	20100178981		2010-07-15	Holcomb Paul L	
	1430	20100179032		2010-07-15	Perry David A	
	1431	20100179035		2010-07-15	Eric Scott Carnahan	
	1432	20100179883		2010-07-15	Teoco Corporation	
	1433	20100182436		2010-07-22	Bill Boman et al.	
	1434	20100184565		2010-07-22	Matthew Avellino	
	1435	20100184568		2010-07-22	Rowdy Arjan Schippers	

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	Attorney Docket Number	13-025.4.2

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CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Richard K. C. Chang II/	Date (YYYY-MM-DD)	2018-10-02
Name/Print	Richard K. C. Chang II	Registration Number	52719

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**